California State Journal of Medicine.

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Communications on subjects of interest to the profession are invited. The "Journal" is not responsible for the views advanced by correspondents. Address letters relating to the "Journal" to the publication office, 31 Post Street, San Francisco.

FEBRUARY, 1903.

EDITORIAL NOTES.

HEALTH BOARD IS VINDICATED.

The commercial bodies of San Francisco in joint session passed resolutions early in this month tacitly admitting the presence of bubonic plague in the city, and promising support to the health authorities in the work of eradicating the disease, and rescuing the Coast and nation from a threatened calamity. While the action is tardy and, naturally, taken reluctantly, it became absolutely necessary in order to escape the alternative proposed by the Surgeon-General—State quarantine. The indorsement thus given the "old" Board of Health, forced though it be, has been regarded by the profession as a vindication of their position. There is no feeling of exultation over the fact that these captains of commerce have at last recognized the true motives of the medical experts who gave the warning of danger in announcing the presence of the dread scourge in this city. The doctors who disclosed the existence of the disease here were profoundly impressed over the result they feared their unexpected and unwelcome discovery would have on the material interests of the city and Coast, but they did not falter in the performance of their duty, and got for their reward a perfect torrent of opprobrium. The commercial bodies and lay press did everything possible to discredit the investigation and findings of the medical men. They were accused of sordid motives and were called fakers. For over three years the work of freeing the city of the disease has been opposed and obstructed; sometimes openly, sometimes covertly. The truth could not be concealed, however, and now that the professional view of the situation has been accepted, the work of eradication may be pursued along scientific lines, with promise of success. The health authorities, aided and encouraged by the powerful commercial bodies, can now go forward unhampered in the work of purging the city of the disease, until the ultimate germ has been ferreted out and destroyed; for so long as there is a vestige remaining just so long is there danger. That was a false position assumed which counseled inaction and concealment. The history of plague furnishes plenty of evidence of its capacity to lie dormant for years, insidiously gathering strength against the time of favoring conditions for an outbreak. These conditions doubtless existed in Mazatlan recently, and it is well known with what suddenness the scourge became epidemic at that place. The only safe course is to eradicate, utterly destroy, every trace of the disease to be found, and that is the course advocated by the medical profession. The fact being admitted that cases of the disease have been found here, whether few or many has little to do with the danger involved, the next step, patent to everybody, is to take proper means to stamp it out. Cases of bubonic plague must be treated with even more stringent measures than those employed in fighting smallpox; and publicity is a safeguard rather than a hardship. The meeting of the State Boards of Health in Washington adjourned pending action by California. The representatives spoke in no uncertain terms regarding the course pursued by the State Board and by the State and city civic authorities. They approved the course of the city Health Board and regretted that they had not been supported by the Mayor, press and commercial bodies. The charge that the representatives in Washington had been induced to take the stand they did by commercial bodies in other States desirous of diverting trade from this port, is a reflection on the character of the professional men concerned as contemptible as it is false. Only charlatans, "quacks"—in fact only men who are ostracised by reputable physicians, could be employed in such dirty work. The *Medical Times,* in discussing the situation, says:

It is our opinion, fortified by private information, that while an open acknowledgment of the correctness of the diagnosis and the existence of the disease was secured, the prime objects—protection and prevention, stand in no better way of fulfillment than ever.

The JOURNAL sees in this "open acknowledgment" the first important step toward securing "the prime objects." Protection and prevention may come only after an acknowledgment of their necessity. The resolution passed by the joint commercial bodies, after the preambles, reads as follows:

***Resolved,* That this mercantile joint committee, consisting of the officers and other representatives of the State Board of Trade, the San Francisco Board of Trade, the San Francisco Chamber of Commerce, the Merchants' Association of San Francisco, the Merchants' Exchange of San Francisco, the Manufacturers and Producers' Association of California and the California Promotion Committee, hereby strongly urges the Governor of the State and the Mayor and**

Supervisors of San Francisco to take such steps at once as shall secure a prompt co-operation of the Boards of Health of the city and State, under the supervision of the United States Marine Hospital Service, to the end that all danger from bubonic plague may be eradicated; that all fears of infection may be removed; that the confidence of the Boards of Health of other States and Territores may be restored, and that no injury, however remote, may result to the foreign and interstate commerce, and to this end we hereby pledge to the officials of the State and city every aid and support of the various commercial bodies which we represent.

MERCANTILE JOINT COMMITTEE,
Frank J. Symmes, Chairman; L. M. King, Secretary.

USEFULNESS OF COUNTY SOCIETY.

Some of the wide-awake Sonoma County physicians are about to organize a county society under the plan provided for membership in the State Society. Before the annual meeting in April every important section of the State will have completed arrangements for organization along the same lines, at least the indications point that way. Members of the State Society residing in localities where there are no county societies, should feel enough interest in the purposes and plans of the State Society to devote a little time toward organizing such a society. Take the initiative, appoint yourself a committee of one to call a meeting of your local confreres. Make a start. Half a dozen good live men, interested in keeping the profession on a high plane, free from the invasion of incompetents; protection of their rights under the laws; alive to the importance of keeping abreast the times in medical and surgical achievements, and who believe that a frequent exchange of ideas tends to brighten the mind, these men—half a dozen—may start a medical society, which in a remarkably short time will increase in numbers and grow in interest. Dr. Cheney in his address of welcome last year to the State Society well said:

It is undoubtedly good for us to meet together and exchange views. No man knows it all. Each one is able to learn something from his neighbor. In the rush of actual work with our patients during the year, we have no time to talk over cases with each other and so to find out how the other man does his work. It is only by such meetings as this that opportunity is afforded for mutual exchange of experiences in our profession. We who belong to this Society and attend its meetings, feel that we are helped by them to increased usefulness.

The same is true of the county society, and in some respects the subordinate is of more value to the member than the parent body. Particularly is this true in the matter of creating and cementing fraternal feeling among worthy members of the profession. With identical aims and ambitions, the petty jealousies and sneering criticisms disappear when practitioners get together and learn to know each other more intimately and find how much in common there is in the noble work to which they are devoting their lives.

A QUESTION OF "PURE FOOD."

The investigation into the affairs of the "Beef Trust" has brought to light some interesting facts. All cattle are inspected by Government inspectors before being slaughtered, and if no signs of disease are noted, they are passed and the dressed beef is ticketed as having "passed inspection," and is thus tacitly guaranteed by the United States Government. (It would be interesting to know what proportion of the cattle "passed" is really diseased.) But not only is the dressed beef thus guaranteed, but all the various products, tinned meats, sausage, etc., are also marked as having "passed Government inspection," a statement that doubtless arouses in the average mind a belief that the article so marked is pure and free from adulterants or preservatives. A high official of one of the big packing houses testified that bologna sausage was colored with zingiber, in order to give it the appearance of good red beef, and that the casing is dipped in gum shellac in order to seal it and prevent deterioration. Mr. Frisbie's crowning argument as to the wholesomeness of this "doctored" sausage, which bears the stamp of having passed United States Government inspection, was: "I ate some yesterday morning and am still alive." Truly, Mr. Frisbie is a brave man. The superintendent of another house testified that "In the preparation of dressed beef we use no preservatives, only water. * * * The meat is kept in coolers three days, then shipped with muslin covers. No chemicals are used." The German Government chemists found that the outer inch of all American dressed beef submitted to them contained a minimum of 5 per cent pure boracic acid. This should be looked into by the American packing houses, for if they use "no chemicals, only water," some one is putting boracic acid on their beef in order to injure their business. The German Government is not averse to allowing its people to eat borated meat, but it objects to having American dressed beef, shipped as free from preservatives, contain *quite* so much boracic acid.

The San Bernardino County Society has completed the necessary arrangements for affiliation with the State Society, and is now in line for protection and progress.

Fresno and Riverside Counties are also important recent additions. There are no counties in the State, or at least but few, not now represented in the State Society, either through affiliation of local bodies or through individual membership. Illinois State Medical Society is at present the strongest in point of numbers in the country, the total membership being over 4000; and this splendid organization was effected largely through the well-directed efforts of Dr. Kreider, State secretary, and editor of the *Illinois State Journal.*

THE EDDYITE BOOK CONCERN.

Probably the biggest book peddling institution in the world, for revenue only, is the association of highly intelligent (?) individuals known in modern English vernacular as the Eddyites, but sacrilegiously taking to themselves the name of "Church of Christ, Scientist." The thoughtful Mrs. Eddy, whose commercial instinct certainly suggests more of the material than the spiritual, though her printed word denies the existence of the material and asserts that man is wholly spirit, has made obligatory upon all her sheeplike following "to sell as many of the books as possible," or, in the event of their not doing so, to be liable to the horrible punishment of exclusion from the society of idiots, or Eddyites. Certainly a lack of commercial ingenuity can not be charged against the founder of the Eddyites. In this country we are impressed most strongly with that phase of the Eddyite movement by which its members are self-constituted medical quacks, but in England the sect seems to be attracting a good deal of attention, owing to its quasi religious attitude. On this score the Dean of Norwich has recently conducted a campaign against the Eddyites in a series of sermons. In one address, his text being, "They that are whole need not a physician, but they that are sick," he demonstrated from Mrs. Eddy's book the sacrilegious nature of her claims. It might be well for some of the ministers of God's people in this country to awaken to the importance of taking a similar stand and thus save the lives of a few hundred children annually.

INSPECTION OF MILK.

At the annual meeting of the Kings County Medical Society (Brooklyn. New York) on January 20th, Dr. Bartley read a report of the committee on milk inspection that is worthy of attention. The commission had examined nearly 300 specimens of milk and had undertaken the work of establishing "certified milk" depots at various places where decent milk can be obtained. It was found that the number of bacteria per c. c. of ordinary "grocery store" milk averaged about 10,000,000, while the number per c. c. in the milk furnished by dealers complying with their requirements and "certified," could easily be kept below 1500, and in many instances was well below 1000. The Hoagland Laboratory had been placed at the disposal of the commission and the time of two men for almost the entire year had been devoted to the work. No funds being available, the commissioners had defrayed all their own incidental expenses, a characteristic unusual to commissions and highly commendable—when one is not a commissioner! So excellent was the showing made that the society moved to recommend the trustees to appropriate funds for continuing the work for another year. This just goes to show what can be done if the effort is made, and certainly this work is worth doing; probably most of us who drink milk would have no lasting regret to know that we were consuming 9,999,000 less bacteria per c. c. of milk than had formerly been our unwilling habit. And doubtless the loss would be agreeable to the stomachs of many babies as well.

NEW YORK'S PHENACETIN.

The Health Department of New York City recently purchased samples of phenacetin from something over 300 drug stores in the various boroughs of the city. Of these samples, less than one-fifth were found to be the pure drug which they purported to be; some were pure acetanilid and most of the impure specimens contained acetanilid in varying quantities, mixed with starch, gums, and other adulterants, and a small amount of phenacetin. This is truly a delightful state of affairs, and that similar conditions would be found to prevail in all parts of the country, if careful examinations were made, there can be no doubt. The present state of pharmacy, "as she is practiced," and therapeutics, "as she is not taught," are most deplorable. If the honest and self-respecting pharmacists and manufacturers on the one hand, and physicians and teachers on the other, do not soon combine on some practicable scientific basis for their own protection, the physician who desires to have his patient take any particular remedy will be forced to buy it himself, in original packages, and dispense it directly to his patient. It is appalling—almost incredible—that four-fifths of the pharmacists in question should be dishonest to the point of endangering life for such a paltry gain in dirty money.

LIMITS IN ADVERTISING.

It is not proper nor is it ethical for the physician to make use of secret preparations or nostrums in his treatment of the sick. If he is competent to fulfill his obligations to the public, and to the authorities licensing him to practice, he is competent, supposedly, to prescribe such remedies as are most apt to relieve the condition for which his aid is sought; or, recognising the limitations of his profession, he is aware of the fact that all remedies will be useless. To prescribe or recommend the use of a nostrum or a preparation the actual ingredients of which he does not know, is to be guilty of fraud, unethical conduct, and incompetence, for he may be doing actual harm to his patient. Con-

sequently it is not proper nor is it ethical, to say nothing of its being dishonest, for a medical journal to admit to its advertising pages—and thus recommend physicians to use—nostrums or preparations the actual active ingredients of which are known only to the manufacturers. That is the position which this journal has taken in regard to advertising. If a reputable and presumably honest manufacturer wishes to offer a "specialty" for advertising, and states the quality of the active ingredients contained, it will be accepted, unless his advertising "copy" contains absurd claims for his preparation. If the manufacturer is one presumably not honest, nor truthful, his advertisement can not be accepted by us. Until we have a professional Bureau of Standardization to deal with these questions, the JOURNAL can do nothing more and nothing less.

EDDYITE MODESTY.

Nothing is so touchingly pathetic nor so beautiful as modesty and self-retirement in the truly great. It furnishes a living example for old and young, for the ambitious and for the honest plodder, and is admired by all. One can not help but feel a glow of admiring sympathy for the candid and Christian modesty of the commercial Mrs. Eddy, when she comes boldly to the front and denies a desire to be called "Mother Mary," or to be reverenced and worshipped with, or even before that other Mary—the mother of Christ. "Mother Mary," indeed! No, she did not ask her beloved followers to call her thus; rather she besought them not to do so; but in vain, for the eddyite is a persistant creature, and an adoring. The eddyite, too, has learned well the text "Suffer little children to come unto Me, and forbid them not, for of such is the kingdom of Heaven." The little children come; they suffer; and they quickly depart to "the kingdom of Heaven," through the Christian assistance of the eddyite and the teachings of his beloved "Mother Mary." And it is even now the twentieth century.

It is with much pleasure that the JOURNAL records the passage of a bill through the Senate, on February 4th, granting a pension of $125 a month to the widow of the late Dr. Walter Reed, in special recognition of his eminent services to mankind in discovering the cause as well as the means of preventing transmission and propagation of yellow fever. Certainly such action is the least that our Government could do in recognition of his incalculable service, a service that, in the opinion of General Leonard Wood, will effect a saving annually of more lives that were lost in the Spanish war, and of more dollars than the total cost of that war.

THE INDEX MEDICUS.

The Carnegie Institute (as well as the medical profession) is to be congratulated for undertaking the publication of the Index Medicus. Like many purely scientific publications, it could not be self-supporting, and hence died; that it is to be brought into life once more and the work taken care of by the Carnegie Institute, will be welcome news to many who have sadly felt the loss of this very valuable bibliographic publication. If we may take this action as indicating, even to a small degree, the intention of the trustees of the Carnegie Institute to foster and aid meritorious bibliographic work, then is the news still more delightful. Nothing is more useful nor more essential to the worker in any scientific or literary field, than even fairly good bibliographies; yet commercially they can not be successful, and consequently their number is very limited. Thus far the trustees of the Carnegie Institute have given rise to the impression that they had determined to become a heating plant on the hot air plan; the news that they have stopped talking long enough to do something is encouraging.

Resolutions were presented and unanimously adopted opposing any change in the existing medical law of the State at the present session of the Legislature, by the California Academy of Medicine at the last meeting, as follows:

"WHEREAS, The present medical law was most carefully drawn on the lines of the experiences of the different States having medical law; and,

"WHEREAS, It had, at the time of its passage, the support of all State medical societies having State boards of examiners; and,

"WHEREAS, It had been in force but sixteen omnths, and has in that time satisfied the vast majority of the medical profession, and has received the unqualified indorsement of the chief medical societies of the State; be it,

"*Resolved*, That the California Academy of Medicine condemns all such proposed medical legislation, and that it expresses herein its confidence in the efficiency of the present law, and in the fairness and practicability of the examinations held by the State Board of Medical Examiners."

SOME CRITICISMS.

Commenting upon the position taken by the STATE JOURNAL in the matter of ethical advertising, the *Pennsylvania Medical Journal* says:

This is the true ethical spirit and the profession of California should see to it that their courageous editor does not "go broke." All mankind is in the pursuit of happiness and all men discover, sooner or later, that the acquisition of money alone is not the surest means toward the universal goal. We can assure the editor of the California State Journal of Medicine that to publish an ethical journal will bring him abundant returns for his labor, though not likely in a financial way. The writer has been engaged in the publication of two medical journals for sixteen years, that never knowingly accepted an advertisement of a patented or proprietary medicine, and while little lucre has accumulated he was never quite "broke," though sometimes the margin was so narrow that escape seemed almost providential. We make this statement for the reason that our Western co-laborer has overlooked the existence of *The Pennsylvania Medical Journal*, the first journal published by a State Medical Society, and *The Pittsburg Medical Review*, its predecessor, equally ethical in character, not to mention the *Illinois Medical Journal*, representing the transactions of the Illinois State Medical Society, which has existed for two or three years on a strictly ethical basis.

By making an examination of the two journals referred to it will be found that Dr. Kœnig makes no idle claim in the matter of ethical advertising, either for his own excellent Keystone State publication or for his neighbor of Illinois. The point the STATE JOURNAL desired to make was that far too many medical publications owe their existence wholly to advertising patronage, and that little or no restriction is observed in the matter accepted.

CALIFORNIA STATE JOURNAL OF MEDICINE, No. 1 of Vol. I of this new medical journal is on our table. It is published by the State Medical Society of California, through a publication committee.

We look through the Constitution of the State Society and find, to our surprise, that it has no committee on Medical Jurisprudence!

It has a standing committee on Nervous and Mental Diseases, and one on Medical Legislation and Education, otherwise it ignores forensic medicine. * * * Should there not be attention paid to the proper education of the medical man as to his rights, powers and duties as a medical witness? And to the learning requisite to make him a competent medical expert in medico-legal cases? What about railway and military surgery?—*Medico-Legal Journal.*

(Mr. Bell answers his own questions quite fully by referring to the standing committees on Medical Legislation and Education and on Surgery and Anatomy. Medical education embraces medical jurisprudence just as does surgery embrace treatment of railway accident cases and casualties of the battle field.—ED.)

THE BUBONIC PLAGUE.

(From Northwest Medicine, Seattle.)

During the past two and a half years, while the plague has been known to exist in San Francisco and the country at large has witnessed the discreditable efforts of the State and city officials to blind the eyes of the world to the facts, proven by local, Federal, and other scientific workers, the fears of its introduction into other sections have been allayed by the confinement of the dreaded disease to San Francisco and its immediate vicinity. Yet uneasiness has constantly prevailed on the Pacific Coast and speculations have been ventured as to when and where it would next appear. Now it seems that the inevitable has occurred, and the claim of its existence in certain Mexican cities, imported directly from San Francisco, remains unchallenged.

If it is true, as has been stated, that the plague is most prone to follow the routes of the shipping, no portion of the coast is subject to greater menace than that tributary to Puget Sound, with its extensive maritime connection with the California metropolis. In view of the existing situation, it is useless to vent our spleen on those whose misguided disregard of the real facts of the disease has helped to foster and spread it. We must face the possibility of its introduction into the northern cities and be prepared to cope with it. The British Columbia authorities have already anticipated us in establishing active measures to meet future contingencies. The Provincial government early acquainted itself with the true situation by sending a medical representative to San Francisco to study the disease in person, and the cities across the border are already prepared to dispose of cases that may arrive and to establish a quarantine whenever it seems advisable.

Heretofore we have seemed content to exclaim, "we are in no real danger, our Federal quarantine officers will protect us against an invasion of the disease." But since it has appeared at a distance from the original focus, the State and local boards of health on the northern coast have realized that they, too, must be armed and ready for a possible struggle with it.

Whatever general or specific measures may be adopted for averting the reception of infected persons, we wish, in a forcible manner, to call the attention of boards of health of the Puget Sound cities to the fact that there is absolute ignorance of the disease, as concerns personal knowledge, on the part of the medical profession of the Northwest. While we are familiar with the symptoms and treatment of all ordinary diseases, the previous absence of this from our land has prevented the actual study of the plague. In no aspect of the affairs of life is experience of such vital moment as in medicine. It decides the selection of a practitioner by the patient, assures the success of the former, and often turns the scale for life or death. Is it not, therefore, incumbent upon the health authorities at this time to secure a familiarity and experience in bubonic plague, that will serve as a protection against a future incursion of the disease?

We feel it the duty of the cities of the Puget Sound district, especially the larger ones as Seattle, Tacoma and Everett, to commission a competent physician to visit San Francisco and institute a personal study of the plague, where alone it can be investigated in our own land, thus familiarizing himself with its bacteriology, symptomatology and treatment, according to approved methods in vogue to-day. The necessary expense incurred may well become a profitable investment if the first case to reach our shores can thus be early detected, isolated and properly treated.

These suggestions are intended to cast no strictures upon any inspection or quarantine measures that may be adopted. The danger is sufficiently imminent to warrant the anticipation of the approach of the disease, should it escape preventive measures and appear in our midst. Such action is comparable to that of the successful merchant, whose prosperity demands the expenditure of time and money to forestall the fluctuations of the market rather than risk pecuniary loss. But we are now considering the protection of the most precious thing on earth—human life—to accomplish which no sacrifice is too great and no financial expenditure unwarranted, however extensive.

MEDICAL LITERATURE.

Biographic Clinics, by Dr. Geo. M. Gould, is just from the press of P. Blakiston's Son & Co., Philadelphia. It is certainly a most unique and original volume, charmingly written and intensely interesting; as indeed is everything from the pen of Dr. Gould. To disinter from the buried records of great men, dead and gone, a fairly accurate clinical picture, and after the lapse of years to upset incorrect diagnoses and establish correct ones from the fragmentary biographies at hand, would seem, to any one less daring than Dr. Gould, an absurdly impossible task. Yet this is precisely the work undertaken in *Biographic Clinics*; and that it has been well done there can be no question. There seems little doubt, after going over the case presented by Dr. Gould, that the lives of De Quincy, Carlyle, Darwin, Huxley, and Browning were in a great measure made miserable by uncorrected astigmatism and unrelieved eye strain. Undoubtedly there will be many who will smile the sarcastic smile, and comment on the work as being the biased utterance of a fanatical specialist who lays everything at the door of his specialty. Yet there will be others, and their number will grow as the book becomes more widely read, who will take to heart the lesson that it brings to them. That eye strain, like any other persistent nerve drain, may produce and does produce profound disturbance of the general health, and has a very marked influence over the mental as well as the physical condition of some people, no occulist will deny, and to which many of us can testify in ourselves. It is not urged, as they of the "sarcastic smile" class seem to think, that every one who has a bellyache is a proper subject for astigmatic lenses; but it is urged that the ill-defined ailments of many people may be due to apparently remote causes, and that eyestrain, as one of these possible causes, should be determined or eliminated in every such person.

This little book will have more than served its purpose, however, when the great truth and force of one idea it presents shall have been realized: "The patient before us is a history and a prophecy;" the ailment for the relief of which he comes to-day is only a very small part of the problem he should present to the conscientious physician. He is a history —of other ailments, mental and physical, all more or less bearing on the present condition; he is a prophecy, in that his potentialities should be studied and not alone so far as a prognosis of the immediate ailment is concerned.

Whether or not Dr. Gould has here demonstrated his point as to eyestrain being the principal cause of the lifelong ill health of those he has studied in this volume, is a matter of opinion—of the individual opinion of each reader—and not a question of fact. But that he has presented a wonderfully strong "brief," and in a forceful, attractive and intensely interesting manner, is a fact. Personally, I think he has proven his claim; but, of course, there may be others who will not think so. P. M. J.

The Association of Medical Librarians and the editors of *Medical Library and Historical Journal* are to be congratulated on the character of the journal which they have just established. In its general appearance as well as in the matter which it contains, it is a good piece of work well done. The lists of medical publications and exchanges will be found to be of very great value to every medical librarian in the country, and to many individuals who have fairly good private libraries of their own. It is to be published quarterly from 1313 Bedford avenue, Brooklyn, N. Y.

Lessons and Laboratory Exercises in Bacteriology: An Outline of Technical Methods Introduced to the Systematic Study and Identification of Bacteria.. By **Allen J. Smith**, M. D., Professor of Pathology, University of Texas: Philadelphia, P. Blakiston's Son & Co., 1902.

This book is designated as a laboratory outline for class work or individual study in Bacteriology; being a series of exercises carried out at the University of Texas, so arranged and systemized as to be adaptable as a laboratory manual. The work, as outlined, may be carried out in eight or nine weeks, of ten hours a week. The subject matter is in the form of lessons, considerable space given to explanatory matter and illustration. Blank pages alternate throughout the book upon which can be recorded the results of the day's exercises. The author does not claim originality in matter or presentation, but has aimed at "a fixation of systematic procedures in class work." In this respect the book fulfills its purpose. The amount of work given is sufficient to give the student a good basis for further investigation. The lessons are well arranged; each step is made clear; it is concise without being curtailed; it is practical, it is modern.

H. P. H.

A Guide to the Practical Examination of Urine for the Use of Physicians and Students. By **James Tyson**, M. D., Professor of Medicine in the University of Pennsylvania. Tenth Edition, Revised and Corrected, With a Colored Plate and Wood Engravings. P. Blakiston's Son & Co., Philadelphia, 1902. [Price, $1.50 net.]

This is a revision, with additions, of a familiar book. The subject matter has been brought up to date. The arrangement is commendable. Each subject is taken up, first with a short general consideration; the different tests or means of estimation are then given, and, finally, the clinical significance discussed; sources of error and avoidance of same are pointed out. Lately there have been a multitude of tests brought forward, or modifications of standard tests, each claiming some advantage along the lines of accuracy or simplicity. The most important are given here, discussed, and their comparative advantages or disadvantages noted. The fact that this is the tenth edition argues for its worth. It is a handy laboratory book for either the student or practitioner, and has to recommend it—clearness, conciseness, modernness and practical usefulness. H. P. H.

A Compend of Human Physiology Especially Adapted for the Use of Medical Students. By **Albert P. Brubaker**, A. M., M. D., Adjunct Professor of Physiology and Hygiene in the Jefferson Medical College. Eleventh edition, revised and enlarged, with illustrations and a table of Physiologic Constants. P. Blakiston's Son & Co., Philadelphia, 1902.

The compend follows the usual arrangement of physiologic subjects, containing chapters, brief and compact, from the physiology of the cell to reproduction. It is designed as an assistance to the student during attendance on lectures. It is not a laboratory guide—it certainly is not a reference book. The usefulness of quiz-compends in physiology to-day finds a very limited sphere. As an example of such a book it is creditable, and the subject matter is recent.

H. P. H.

The Physician's Visiting List for 1903-4, issued by P. Blakiston Son & Co., Philadelphia, marks the fifty-second edition of this complete and compact little publication. A visiting list, to be carried in the

pocket, has come to be indispensable to the physician, and the fact that Lindsay & Blakiston's list has enjoyed popularity for half a century is sufficient evidence of its practical worth. The list may be ordered through any bookseller, and a dollar is the reasonable price.

The State Journal acknowledges the receipt of two monographs from the author, Dr. William A. Edwards, Coronado. The titles are, "Littoral California," read before the Climatological Society at its last meeting, and "A Study of the Relation of Rheumatism and Appendicitis," read before the San Diego County Medical Society.

The January number of the *Southern California Practitioner* began the eighteenth year of its useful life. Being such a handsome publication it appropriately may be given the feminine gender and congratulated upon coming of age. Long may she live and flourish.

The CALIFORNIA STATE JOURNAL OF MEDICINE is a neatly gotten up journal, and will no doubt make itself a general favorite on the Pacific Coast.—*St. Louis Medical and Surgical Journal.*

MEDICAL SOCIETY MEETINGS.

SAN FRANCISCO COUNTY MEDICAL SOCIETY.

At the regular meeting of the San Francisco County Medical Society, on Tuesday evening, February 10th, Dr. George F. Shiels discussed Edebohl's operation for nephritis, reading extracts from Dr. Edebohl's reports showing successful results in some cases where decapsulation of the kidney had been performed.

Dr. Huntington said that as such a large mortality is mentioned in the monograph, he could not see anything in the operation under present knowledge that looks to its adoption generally.

Dr. Terrill said he was favorably impressed with the description given of the operation, but could not fail to observe the large number of failures referred to in the schedule quoted.

Dr. Bowers said there might be cases of contracted capsule where relief could result through the operation. There may be better results hereafter, but it is still open to doubt.

Dr. Johnson said he had been engaged in observing results in the laboratory on dogs, and had not been much impressed with the operation of decapsulation of the kidney as mentioned by Edebohl. The concensus of opinion is that relief comes in these cases from blood-letting and reduced pressure.

Dr. Sprague read some notes he had made on the subject, as follows:

"After listening to the interesting remarks of Dr. Shiels, I should like to say that I believe the time is near when chronic Bright's disease will be generally recognized as having for its etiology a chronic gastro-intestinal, or simply a chronic intestinal indigestion; and I wish to go on record as saying that more good can be accomplished in the treatment of this disease by directing our therapeutics to the morbid processes in the alimentary canal than by treating any of the symptoms or pathological conditions dependent upon a faulty metabolism.

It seems to me the only possible indication for an incision into, or a decapsulation of, a kidney in chronic Bright's disease is, as Dr. William H. Porter says, when the capsule interferes with the normal 'contractibility and expansibility of the renal gland taken as a whole,' which is due to the variations of blood pressure within its substance.

"We all know that chronic Bright's disease cannot be histologically cured, but that in many instances a physiological cure can be accomplished we are well aware; for we have all seen cases of this disease where its remissions have been prolonged, and perfect health has been apparently restored. As a person may, with care, live for years in apparent health with only one kidney, so, also, may one enjoy fair health indefinitely with partial degeneration of two kidneys; in fact, autopsies have often disclosed advanced disease of both kidneys when patients have died from other causes, and have never, apparently, during their lives, suffered from renal insufficiency. Bright's disease is an oscillatory affection, with its exacerbations and remissions, and we are apt, therefore, to be misled in ascribing wondrous results to therapeutical novelties; consequently it behooves us to wait for a reasonable length of time before deciding whether decapsulation is a justifiable procedure. We have, in nitroglycerine, from its power of reducing blood pressure, a means of accomplishing much the same beneficial results as can be ascribed to, or expected from, decapsulation.

"This, of course, is not the time to discuss other than surgical measures for the relief of Bright's disease; but I hope, in the near future, to have something more to say on the subject of treatment, much of which has been learned from a close, personal experience with the malady. However, if the intelligent application of therapeutis, directed from an etiological standpoint, should fail to arrest the progress of chronic Bright's disease, or to reduce an abnormal renal tension and parenclymatons edema, which are the only pathological conditions decapsulation is likely to overcome, then, and not until then, I would say decapsulation is justifiable.

"In conclusion, it seems to me more reasonable to expect good results from the knife in carefully selected cases of acute than in chronic Bright's disease."

Dr. Shiels, in closing, said that where nine cases were reported cured, in many instances where the attending physicians had given up hope of recovery, he was of the opinion that at least under these conditions the operation should be undertaken, regardless of experiments on rabbits.

Dr. Johnson objected to Dr. Shiels' criticism on laboratory work, and asked for the record of a single recovery of interstitiae nephritis through decapsulation of the kidney.

Dr. Shiels disclaimed intent to cast any reflection on laboratory research, but, on the contrary, held such work as of the greatest importance.

Dr. George Goodfellow read a paper on "Treatment of Gunshot Wounds,"* particular reference being made to wounds in the abdomen.

Dr. J. Henry Barbat said he did not think it advisable nor possible to treat all gunshot wounds in a similar manner. It is astonishing how many times a missile passes through the chest without injury to the great vessels. He advocated dressing and drainage.

Dr. Huntington said that modern weapons made much less serious wounds than those formerly used, and that some of these wounds may be treated immediately by dressing and some by drainage.

Dr. Shiels advocated immediate treatment on the firing line in battle. In case of abdominal wounds, open the abdomen and put in a large Mikulicz drain

* Dr. Goodfellow's paper will be published in the March JOURNAL.

before sending the man a long distance on a stretcher; his chances of life were less if sent back without this preliminary treatment.

Dr. Carpenter said that an interesting case came under his observation where at an autopsy on a man who had been shot through the stomach and lived three weeks, the stomach wounds were found completely healed. An abscess, the cause of his death, was found lower in the abdomen.

Dr. Cooper said that in the Boer war a surgeon who had been shot in the abdomen refused absolutely to take any sort of nourishment tendered him by well-meaning attendants on the field. He had eaten but little for some time before and his stomach was empty. The wound in the abdomen healed rapidly and the connection between the patient's abstinence and recovery was interesting.

Dr. Morton said that he advocated drainage; if the wound be clean and sepsis not feared through the introduction of cloth or substance adhering to the bullet, close it up.

Dr. Goodfellow in closing said his paper was more in the nature of suggestion than otherwise. In regard to wound being aseptic through the agency of the bullet, the latter does not carry microbes. He advised non-interference with small-caliber wounds in abdomen. With large caliber wounds there are few if any recoveries—the mucous membrane and intestines are badly torn. With small-caliber the mucous membrance will at times evert and the contraction of the muscular fibers close the wound. When several tears occur, he had performed a V-shaped operation to get at the injuries all at once. With regard to the empty stomach, it had been his observation that soldiers' stomachs were usually in that condition to a more or less degree.

Dr. E. G. Frisbie exhibited portions of intestines removed in an autopsy just performed by himself and Dr. Kelly. A band of adhesions due to previous inflammatory trouble had formed between the kidney and abdominal parietes, through this about eight feet of intestine had passed and become strangulated. In examining the intestine he noticed a very long and peculiar Meckel's diverticulum, which was exhibited.

Letters were read from Governor Pardee acknowledging his honorary membership in the Society, and promising to give careful consideration to all bills coming to him relating to medical legislation.

Dr. Carpenter read the draft of a letter to be sent to President Roosevelt advocating the appointment of Dr. Chester Rowell, at present State Senator from the Sixteenth District, to membership on the Panama Canal Commission. On motion the letter was accepted as the sense of the Society and ordered to be sent to the President.

CALIFORNIA ACADEMY OF MEDICINE.

The regular meeting of the Academy was held at the offices of Dr. Sherman on the evening of January 27th, Dr. Montgomery in the chair.

Dr. Harry M. Sherman presented a patient showing recovery from pus joint at the knee. Dr. Sherman said that the point he wished to make in presenting the case was that a brisement at any time in the course of the case would have been a trauma. The tendency of these knees is to pass gradually into a flexed position, that tendency had been combatted, and apart from that the knee had been left to joggle itself loose. The patient says his range of motion is still increasing.

Dr. Douglass W. Montgomery showed a patient suffering from Leukoplasia of the Tongue that appeared during secondary syphilis. He said:

"Leukoplasia rarely occurs in the secondary stage of syphilis. Danlos, in reporting a case, searched the literature in vain for any reference to it previous to March, 1898.

"The patient, a Scotchman, 37 years of age, came to the University Clinic August 23, 1901. Except for rheumatism, the family history was good. Both his father and mother are alive. His mother suffers from rheumatism, and an older brother has rheumatism of the left shoulder. In August of 1900 the patient acquired a sore on the lower surface of the penis while in Manila, P. I. This disappeared without anti-syphilitic treatment. In October of that same year he was bedridden with rheumatism of the right ankle. About February of the next year he showed symptoms of secondary syphilis. When he came to the clinic he had a generalized lenticulopapular syphilid.

"The most troublesome lesions he had, however, were in the mouth. The dorsum of the tongue was covered with large, flat papules, and there were a great number of mucous patches on the inner surface of the lips and cheeks. The patient both smoked and drank. Under treatment the papules on the back of the tongue slowly subsided, giving place to glossitis, the smooth, bald tongue of secondary syphilis, and mucous patches. These lesions in turn gradually ceded, and in their place the tongue became leukoplasic. There is a deep furrow down the middle of the tongue, which is probably a natural feature. The dorsum of the tongue is coated with a coating such as is seen in indigestion. Over a large part of the anterior surface of the dorsum of the tongue there is a white opalescent coating which is particularly dense, solid, smooth and white in two patches. These patches are situated symmetrically, one on each side of the median line well out toward the edges of the tongue, where there were formerly two persistent mucous patches. These particular mucous patches were situated in leukoplasic areas, and were covered by a dirty gray coating.

"The tongue is not at present nearly so painful as it used to be. At one time it was spontaneously painful, but now it is only unduly sensitive to such things as hot drinks, pepper, spices, and to touch from food or the teeth.

"Syphilis and arthritism are recognized as the two great constitutional causes of leukoplasia, and tobacco, excessive mercurial treatment, alcohol, spices, vinegar, unclean, irregular, or absent teeth are the principal local causes. This patient has present quite a respectable number of the above causes, and therefore the prognosis cannot be considered very favorable. Barbe and Gaucher have, however, reported two cases where the leukoplasia of secondary syphilis disappeared under treatment with mercury, and the patient in the present instance is slowly improving.

"In this case the treatment with mercury was at first tentative, because the patient was able to come to the clinic only once every two weeks, and it was feared he might, while absent, get stomatitis, and an increase of the irritation in the mouth. Because he was getting small doses of mercury he was also given iodid of potash for its additional effect in combatting the syphilitic virus. Afterwards he was able to come to the clinic once a week, and at each visit he was given an intramuscular injection of a gram of a one per cent solution of bichlorid of mercury. For the past five months he has been receiving, with fair regularity, three such injections a week of one or two centigrams of bichlorid of mercury. Locally the tongue has been swabbed with a 10 per cent soluton of chromic acid. The above-mentioned persistent erosions were induced to heal by scrubbing them with a strong (five per cent) solution of bichlorid of mercury in alcohol. It was considered

very important to secure healing of them for fear they should become the starting point of epithelioma."

Dr. S. J. Hunkin presented a patient showing recovery from operation for tuberculosis of the ankle joint.

Dr. Hunkin said, in presenting the case:

"Attention is called in the foot of the boy on the table to the result attained by what I think is a new operation for tuberculosis of the astragalus. It has long been accepted that in the great majority of cases of ankle joint tuberculosis the original focus is located in the astragalus, and especially so in the head of the bone, and later involves the joint by extension to contiguous tissues. Modern surgeons, therefore, have practiced a rather early radical extirpation of the astragalus as the acme of conservative surgery, when a diagnosis of focal tuberculosis astragalus has been made and good results have thereby been usually secured; and at present a foot riddled with sinuses, leading to a tuberculous tissus, evidences rather bad surgery in a child who has been under regular treatment. Practicing along these lines I had been often surprised after the extripation of the astragalus in the early cases to find how very little the cortex of the bone had suffered, and also in the later cases, when the osseous structure of the bone was perhaps entirely disorganized. Often the articular cartilages, except for a few tiny (worm-eaten looking) punctures, in a small area or areas were apparently unchanged and the joints, notwithstanding these apparent punctures, were seemingly normal. One has the feeling that if the bone focus could have been removed and the progress of the disease checked, the joint would have recovered. While resecting the bone by the anterior incision the exact condition of the joint surfaces was especially evident only after the astragalus was in the basin; but later, operating by the Kocher method, it was found that the condition of the joint cartilages and the absence of joint involvement was demonstrable before the bone was extirpated.

"In two cases of relapsed talipes varus following a suggestion (I think) of Cheadle, I had trephined the astragalus from the external surface and hollowed out its interior sufficiently to allow of a partial collapse, which secured an easier and a better replacement of the foot. Although the astragalus in these cases must have been greatly altered in shape, a movable ankle joint resulted and I determined that in the next case of tuberculosis astralagus, finding the joint of normal appearance, I would remove the bony tissue and leave the cortex *in situ*; and this maneuver was successfully performed in the boy presented. The Kocher incision and disarticulation of the foot showed both the tibial and calcaneal articular surfaces apparently healthy. The bone was then trephined in the outer surface and found tuberculosis, when the whole osseous structure was removed with the curette. In order to be sure that every particle of bone was removed, the head was also opened on the internal surface of foot, so that the whole cavity was readily explored—the seapho-astragalus joint was exposed and found satisfactory, and then, as most of the swelling had been around the head of the astragalus, the contiguous seaphoid was trephined and demonstrated to be sound, and closed. The cavity of the astragalus was then filled with carbolic acid, the joint surfaces were flooded with the same, followed as usual with alcohol, and the wound closed, except for a small opening on either side, allowing for drainage through the bone. Daily thorough douching was practiced a few times, until collapse or contraction of the cavity prevented it. There was considerable inflammatory reaction for a few days in the ankle joint, but otherwise healing was uneventful and the wound was closed in about two weeks. The boy is now rather less than three months from the operation and the result is before you. The boy has not yet been allowed to walk upon the foot, although, except for the scars, it appears in every respect normal. All motions of the ankle are nearly, if not quite, perfect, and examination barely shows which is the foot operated upon. In every respect it shows a decided advantage over the result shown by resection, and in selected cases the operation can be expected to give a much better functional result."

Dr. Sherman said that Dr. Hunkin's work was on the right lines. An early operation to remove a tuberculous focus was in order whenever the focus could be located and reached. The hope was that other foci did not exist and that the disease was being jugulated. In this, one had varying fortunes—sometimes success and sometimes failure. So far as the astragalus was concerned, he had made a practice of removing the whole bone, as the foot did excellently without it; and then, he was sure all the foci were out.

Dr. Rixford said he did not think it necessary to cut the tendons in the operation. Dr. Hunkin replied that the tendons were frequently cut accidentally, but that the repair could easily be made.

Dr. Rixford in congratulating Drs. Sherman and Hunkin on the success of their operations quoted the late Dr. Elias Cooper as saying that the surgeons of San Francisco obtained a greater number of good results in their operations than those of any place in his knowledge.

Dr. Philip King Brown read a preliminary report on his observations of strongyloides intestinalis and exhibited microscopic specimens of embryotic parasites.

Dr. George H. Evans discussed the report.

Dr. Sherman presented a large palm thorn, fully 3 cm. long and about 4 mm. wide at its base, which he had removed from the flexure of the elbow of a boy that morning. The boy had hurt his elbow three weeks before and a large loose fragment was found detached from the bone, just in front of the epitrochlea. There had been no wound and very little impairment of motion, but tenderness, especially if the fragment was touched. By much questioning the history of a previous fall into a palm plant a year before was elicited and at that time there was a little "pin prick," but there had been no lameness nor disability following. Dr. Sherman agreed with the diagnosis of a probable fracture, though just what he could not say, and had cut down on the thorn. It was extraordinary that so large a foreign body had lain in a place of such constant motion as a boy's elbow for a year without causing local symptoms.

One would have expected that, as the tissues pressed against this thorn, the greater pressure on the base, as compared with its point, would have moved it along to some more quiet location; but this particular thorn had waited for the concussion of a second fall to start it on its journey.

Resolutions were passed condemning proposed medical legislation. (Resolutions in full will be found on page 98.)

The building for the National Medical College, the erection of which was provided for by a decree published December 1, 1888, is about completed. The structure is two stories high, and of Greek architecture. It will be fitted with modern appliances and contain the most complete medical library ever collected in Mexico. There also will be a chemical laboratory, as well as a hall fitted for microscopic studies, and a dissecting room. The structure has cost so far $226,000, not including fixtures.—Monterey (Mex.) *News.*

SYMPOSIUM ON HYDROTHERAPY.

HYDROTHERAPY.*

By GEORGE A. HARE, M. D., Fresno.

A BROAD survey of the field of clinical medicine and therapeutics the past year shows much progress along many lines, both of experimental investigation and practical demonstration. But I think in no other department of medicine has experimental work been attended with more practical results than have been achieved by the workers in the field of scientific hydrotherapy.

The overwhelming evidence that hydriatic procedures are among our most rational and scientific resources has created a demand for further knowledge in this field of physiological therapeutics, And, as I introduce the subject of hydrotherapy for your consideration and discussion, I do so not as a specialty or hobby, or for any one particular class of diseases or conditions; but as a valuable, practical, and almost unlimited resource of the clinical therapeutist.

No attempt will be made to outline in detail the treatment of any class of disease, but my purpose is rather to present to you some of the scientific principles underlying hydriatic procedures, and to point out a few of their practical applications in order that we may have a better view of the wide and varied possibilities which are to be found in this most interesting field of therapeutics.

The literature of this subject is so very voluminous as to surprise any one who will undertake to become thoroughly acquainted with it. No attempt, therefore, will be made in this paper to give anything like a complete resume of the literature of hydrotherapy. We will content ourselves with simply mentioning a few of those whose labors have aided in placing hydrotherapy in the front rank of scientific therapeutic procedures.

Hippocrates was a keen observer in many departments of medicine, and pointed out clearly that the body was made warmer by a short cold bath, and made cooler by a short warm bath; a truth which has stood the crucial tests of modern investigators, and the Asclepiads became famous from the therapeutic use which they made of water.

In 1697 Sir John Floyer, of England, published a work on hydrotherapy which, although it antedated the invention of the thermometer, showed very careful observation and research. He advised that warm applications should always be made before taking a cold bath.

His work was followed at a later date by that of Currie and Jackson, who in the latter part of the eighteenth century revived great interest in England. These latter did a large amount of experimental work. Their work was more nearly of a scientific character than any others in this field of medicine prior to the nineteenth century. Before this day the thermometer was unknown, and for this reason their scientific researches were of necessity less accurate. In the early part of the nineteenth century Louis Fleury, of France, made a practical study of the control of temperature by the use of water. His work was very accurate and scientific. He laid particular stress on the use of cold water in the control of temperature. Like many other experimenters he was enthusiastic in the work, and without doubt carried the use of cold baths in some instances beyond the limit of prudence.

In 1784 Schuller, of Germany, published the result of his experimental work in hydrotherapy, demonstrating some very practical truths. He trephined the skulls of rabbits, and demonstrated that a cold, full bath, or cold applications, either to the spine or abdomen, caused dilation of the cerebel vessels, followed by the reaction of contraction. Ice applied to the head caused contraction of the cerebel vessels when long continued.

These experiments of Schuller have all been repeatedly verified by more recent observations made upon men, particularly by the work of Vinaj. From the work of this experimenter has developed the practical idea of controlling the circulation of the deeper tissues and viscera by applications of heat and cold to the surface of the body.

In the latter part of the eighteenth century Dr. Benj. Rush, of Philadelphia, made many observations in the use of cold water, which he used extensively in many diseases. In 1795 he was followed by Dr. Bard, of New York, who advocated, and made use of, cold water in the treatment of fevers.

In 1801 Henry Wilson Lockett, of Virginia, published a thesis on the warm bath which is the most accurate of this period. He showed that the full bath at 107° raised the pulse from 72 to 104 per minute; that the bath at 90° diminished the pulse from 80 to 64.

Dr. John Bell, of Philadelphia, wrote a work on baths in the middle of the present century which was a credit to the author, and marked an era in the history of the development of hydrotherapy.

Helmholtz, the great leader in many lines of scientific work, demonstrated that the rate of transmission of nervous impulse could be reduced to one-sixth that of normal by the application of cold.

Modern scientific hydrotherapy, however, is largely due to the labors of Ziemssen, Brand, and Liebermeister, of Germany, and more especially to Winternitz, of Vienna, who founded the first large clinic of hydrotherapy, at the Royal University of Vienna, and established its use on such a basis of scientific data that nearly every large university of Europe now gives scientific instruction and practical demonstration in hydrotherapy. To his exhaustive labors we are indebted for a knowledge of many of the most valuable truths of this science.

Probably no one person has done more to bring together the truths of hydrotherapy, and classify the same in a scientific manner; nor has any single investigator enriched this field of therapeutics by a larger endowment, and by richer material, than has Kellogg, of Michigan. His recent classical work on hydrotherapy has been freely consulted in the preparation of this paper. From the almost innumerable experiments of this investigator we mention but a

* Read before the Medical Society of the State of California, at the annual meeting, held in San Francisco, April 14 to 17, 1902.

very few of the truths which by his work have been brought to a practical demonstration.

That heat production is increased by short cold applications.

That arterial tension is raised by short cold applications.

That short cold applications quicken the heart beat.

That prolonged cold applications diminish the pulse rate and increase the force of the heat.

That cold applications increase the blood count. (I believe this was first pointed out by Winternitz, of Vienna.)

That a cold douche, or ice bag, to the epigastrium increases the amount of hydrochloric acid in the gastric secretion.

That the long hot bath has a very depressing effect, as evidenced by its influence on the fatigue curve of muscular capacity.

That oiling the surface of the body, if exposed to the air, increases the radiation of heat 50 per cent.

The limits of this paper forbid even the mention of the work of Dujardin, Beaumetz, Simon, Baruch, Landois and Sterling, Austin Flint, Bouchard, Beni Barde, Riley, Baum, Stewart, and a long list of other and honored experimenters.

If anyone thinks that hydrotherapy can be safely administered by the unskilled, successfully utilized by the empirical, or be easily comprehended by the superficial physician, we invite him to dispossess his mind of that idea by a brief consideration of some of the physiological processes which may be controlled almost at will by the scientific use of heat and cold.

But before we can have any adequate appreciation of the vast resources which the hydriatist has at his disposal we must bear in mind that the seventeen square feet of skin surface has several millions of sweat glands, aggregating over 1100 square feet of surface of perspiratory ducts, with their several miles of nerve fibers. That these sweat glands are constantly producing about one and one-half ounces of sweat per hour, the evaporation of which eliminate more than 100 F. heat units, but capable of producing sixty ounces per hour, the evaporation of which would eliminate more than 4000 F. heat units. Besides this, the skin is also a large vascular reservoir, capable of holding one-half the blood of the entire body. This large vascular reservoir can be filled or drained in a few minutes; but by no other means so quickly and accurately, and under such absolute control as by hydriatic methods.

The skin also contains the special nerve endings, from which arise a large proportion of those reflexes that control the vital processes—respiratory, circulatory, chemical and thermogenic. As a controller of these vital processes, by both direct impressions and reflex action, water is today accorded the first place.

Both heat and cold produce effects in three ways: First, by direct influence (primary); second, by reflex action, through the nerve centers, and third, by reaction, or secondary effect.

Starting with the experiments of Schuller and Vinaj it has been demonstrated that the blood supply of every organ can be controlled by thermic applications to the surface of the body; and that almost without exception the blood supply of every organ is influenced in a similar manner, and by every agent that influences the overlying skin. *e. g.,* A long continued hot fomentation or hot douche to the epigastrium will dilate the vessels of the skin over the stomach, and will also by reflex action, dilate the vessels of the stomach. Hot applications over the lower abdomen will increase the blood supply in every organ of the lower abdomen and pelvis, while a long continued cold application will lessen the blood supply both of the skin and the underlying viscera.

The primary effect of heat is to stimulate. It quickens all the vital processes, it increases the production of heat. These effects are produced, not only on the superficial tissues in contact with the hot application, but as just pointed out, the same effect is produced in the deep viscera by reflex action through the nerve centers.

The physiological reaction, or secondary effect of hot applications is a slowing of the vital processes, a lowering of bodily temperature, and a general condition of sedation. A short hot bath increases the functional activity of the skin, brings a large amount of blood to the cutaneous vessels, and, if the application be short the secondary effects immediately follow, which are a lessening of the production of heat and a general sedation; for these reasons the short hot bath is a rational, physiological method of cooling the body. If, however, the hot bath or hot application be prolonged, it may be carried beyond the reaction period, in which case there is continued increased heat production, and if carried long enough will result in great exhaustion.

The primary effect of cold is depressing, sedative, and is always manifested when cold is applied to a living protoplasm. Heat production is lessened. Nature, however, makes an attempt to counteract the effect of the cold applications by suddenly increasing the production of heat, and increasing the blood supply to the cold area. This is what we term the reaction effects of cold, the extent and duration of which are determined by several factors, among which are:

First—The sum total of the vital powers of the patient, from which vital power the reaction effect must come in a wavelike movement.

Second—The intensity of the cold application.

Third—The duration of the application within certain limits; generally speaking, the greater the vital forces the colder the application; and the longer the time, but within narrow limits, the greater will be the reaction.

A short cold bath, therefore, lessens heat production and lessens cutaneous blood supply, but is followed by reaction of dilatation of the

cutaneous vessels with an increase both in the production and elimination of heat. We all know that cold applied to the body will cool it (and it will do it every time), yet there is no more physiological method of increasing the blood supply to a part with an increase production of heat, either local or general, than by a short cold application or bath.

Now, if a cold application or bath be continued we may smother the reaction effect of cold, which would be increased blood supply and heat production; and we may permanently maintain the primary sedative effect of lessened blood supply and lessened heat production. A recognition of these principles is of the utmost importance in controlling the diseased processes of the deeper viscera.

Bearing in mind that the reaction which follows the application of heat or cold is always the reverse of the primary action it is easily demonstrable that by the use of either heat or cold alone we can either increase or diminish the blood supply of every part of the body at our pleasure. These effects are easily demonstrable, always follow this physiological sequence, and are always certain to the operator who is shrewd in his observations and scientific in his methods.

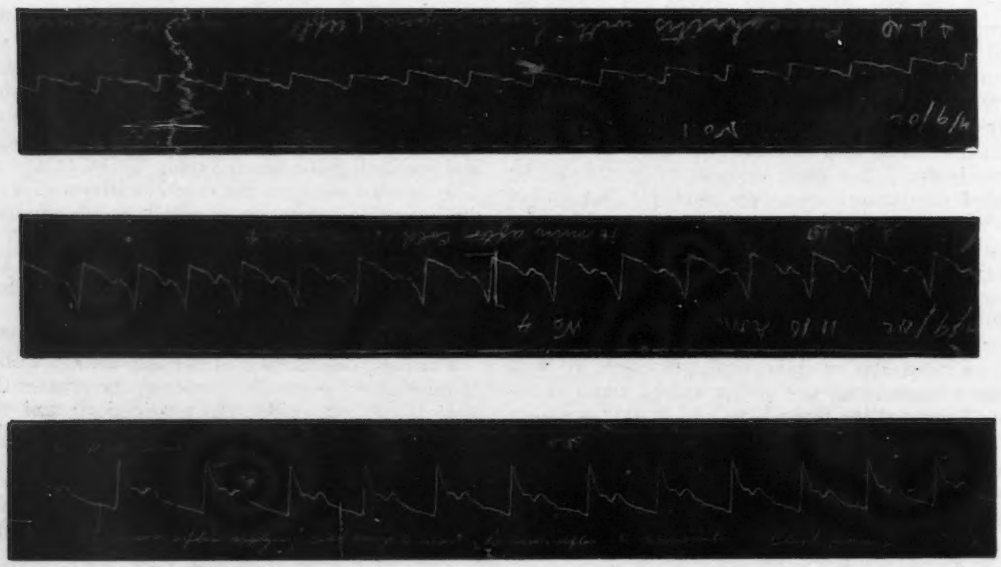
Had the principles of hydrotherapy been clearly understood, and scientifically used, the blood-letter of the past would have found little occasion to puncture the skin for the purpose of depleting any portion of the body to fully meet his most exsanguinistic ideas.

Cold or heat applied to a given area causes the same effect over that area whether the area be great or small. *e. g.,* The cold compress over the liver will lessen cutaneous blood supply, and also hepatic blood supply. Cold applied to the entire surface of the body would lessen the blood supply of all the surface of the body, and would also lessen the blood supply of all the deeper viscera; but in this case we must remember that when we lessen the blood supply of the entire surface of the body we must send a large volume of cutaneous blood somewhere else, and here comes in the mechanical effect of cold as pointed out by Kellogg. All the deeper tissues will be engorged; and ignorance of this principle, through lack of shrewd observation, has caused much of the harm that has resulted from the use of the cold bath. I wish to emphasize, that it is ignorance of the scientific accuracy of hydriatic procedures that has caused all the prejudice and criticism against the use of water.

Time will permit only a brief mention of the resources which hydrotherapy offers to the clinical therapeutist in the way of heart stimulant and tonic, and to make this matter clearer I will ask you to examine these sphygmographic pulse tracings which I pass around, which are intended merely as an illustration of the practical value of cold as a heart tonic, and to emphasize the fact that by neglect of this use of cold we are overlooking the most practical, and by far the most valuable cardiac stimulant and tonic known to therapeutics.*

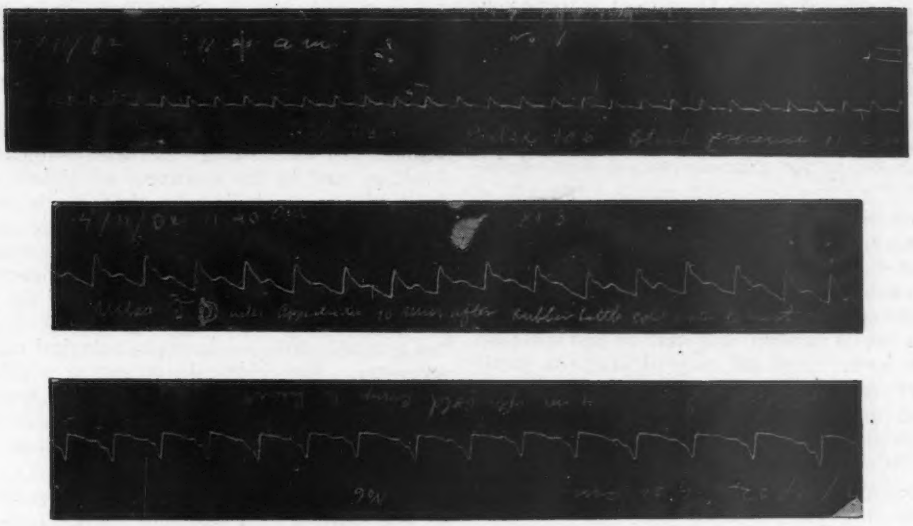
A cold compress over the heart makes the beat first quicker and stronger, then slower with

No. 1—PYONEPHRITIS.



* Dr. Hare exhibited several sphygmographic tracings, two of which are reproduced, referred to as Nos. 1 and 4.

No. 4—APPENDICITIS.



greatly increased strength; at the same time blood pressure is lessened, but by the proper use of heat on other parts of the body blood pressure may be lowered at will.

These tracings, as you will observe, are made from a case of appendicitis, in a patient age twenty-one; a case of pyonephritis, in a patient age thirty; a surgical case of perineorrhaphy complicated with cystitis, in a patient age forty-eight; a case of traumatism of the left hip and leg of six weeks' duration, in a patient age seventy, and a case of mitral insufficiency, with compensation, in a patient forty-six years of age. These will serve to illustrate the practical value of cold as a heart stimulant and tonic. I wish to call special attention to cards 1 and 4, the last tracing on each showing the long continued influence of the cold compress.

What other equal resources have we so rational, harmless, and efficient in cardiac weakness, whether from simple dilation, valvular insufficiency or febrile exhaustion or toxemia, in all of which cases the author has used the cold precordial compress with results equally as good as indicated by these pulse tracings?

In surgical cases threatened with cardiac failure I have found the cold precordial compress a sheet anchor. As a safeguard to the heart against threatened complications in acute inflammatory rheumatism, the author has made use of the cold compress since 1887. I believe Kellogg was the first to call attention to this most valuable use of cold. He has recently pointed out, inasmuch as this cardiac stimulation is a reflex action due to the influence of cold on the nerve endings of skin over the heart, that it is necessary to remove the cold every 30 or 60 minutes and make a momentary application of heat, or use friction in order to maintain the sensibility of the skin, otherwise the cold applications would give us the reverse effect.

Bearing in mind that cold is a powerful stimulant to the respiratory centers, as well as to the heart, the anesthetist finds he has a perfectly safe and rational stimulant, the proper use of which will greatly aid in guarding both these functions against the fatal narcotism of anesthetics. (My experience in this line has been most gratifying). Of course heat abstraction must be compensated by hot applications to other portions of the body.

Winternitz has pointed out that cold is the best known stimulant for cardiac weakness, but with few contra-indications, and Kellogg has drawn a graphic comparison contrasting the effects of digitalis and alcohol as cardiac stimulants with that of cold, in the following words:

When alcohol lessens the power of the heart, as shown by the experiments of Hare and other observers, it at the same time weakens the constrictors of the vessels, and so dilates the small vessels and lessens the blood pressure. In other words, alcohol, while lessening the power of the heart, at the same time lessens the amount of work it has to do. If the work is lessened more than the cardiac power is weakened, there may be a temporary gain to the patient in a given case.

Digitalis produces an effect the opposite of that of alcohol, causing the heart to contract with greater vigor, and also lessening the caliber of the small vessels, thus increasing peripheral resistance in the blood circuit. In other words, digitalis increases the vigor of the heart, and at the same time increases its work. If in a given case the heart's power is increased more than its work is increased, then there may be a temporary gain, but this advantage is not always secured. It is most profitable to note the difference between the effects of water and those of alcohol and digitalis. Alcohol diminishes the work, but also the working power. Digitalis increases the

working power, but at the same time increased the work. *Cold increases the working power, while diminishing the work.* Moreover, alcohol and digitalis, both being toxic substances, add to the toxemia which is often a cause of cardiac inefficiency, while, on the contrary, hydric applications aid in the removal of the disturbing poisons. No condition requiring the use of a heart tonic or stimulant can be named in which a hydriatic application of some sort will not answer the indication far more efficiently than any drug known to the pharmacopeia.—*Kellogg, Hydrotherapy, Page 205.*

Where we wish to control inflammatory action, the proper use of a cold compress or an ice pack will prove an ideal treatment; but if the process has gone far enough to cause much edema with extensive infiltration of the tissues, or if pus has already begun to form, cold may be just what we do not want. It would only prolong the inevitable crisis, delay the formation of the circumscribing pus wall, and prolong the danger of septic poisoning. Hot applications in such cases would be clearly indicated.

In beginning appendicitis the scientific use of the cold compress will often abort the inflammatory process and deprive the attending surgeon of the honor of saving the patient's life by a skillful appendectomy. The author has used it many times and knows of no conservative treatment that will at all compare with it.

In the treatment of gastric disorders, whether hyperchlorhydria, gastric ulcer, gastritis, myasthenia or neurasthenia, many cases of which are complicated with subnormal activity of the liver with diminished peristalsis—that group of cases in which a large proportion are so disappointing by the use of drugs—it is here that hydrotherapy meets the indications in a physiological manner.

A warm compress will relieve the pain and irritability of a gastric ulcer, and at the same time lessen the aggravating peristalsis, while the cold douche will increase the peristalsis in the myasthenic and neurasthenic cases and raise the tone of every organ of the digestive system. Used half an hour before meals in cases of hypopepsia the cold douche greatly stimulates the gastric secretions, while in hyperchlorhydria a warm application half an hour before meals will lessen the secretion of hydrochloric acid. In the treatment of gastric disorders the writer has made use of hydriatic methods for fifteen years, with most gratifying results.

In the control of the menstrual function hydriatic methods offer to the gynecologist almost a specific. It has long been known that a cold compress to the lower abdomen will lessen the blood supply of the uterus and lessen the flow; and that a hot application to the same area will increase the flow. Later experiments have shown that a continued cold compress to the lower dorsal and lumbar area will dilate the uterine vessels, while long hot applications to the dorsal and lumbar region will contract them. A cold lumbar douche with 25-30 pounds pressure for 2-4 seconds will dilate the uterine vessels, while a cold douche at 15 pounds pressure for 30 seconds will contract them.—*Kellogg.*

Very short applications of cold to the breasts, lower abdomen, inner surface of thighs or the feet, will increase the blood supply to the pelvic organs, while prolonged cold applications to these reflex areas will greatly lessen the pelvic blood supply. In establishing the delayed menstrual function, and in the treatment of almost every form of menstrual disorder, these truths are of immense significance. By their scientific use the menstrual flow may be increased or decreased at will, hemorrhage may be arrested, inflammation controlled, not to mention the relief of the pain, and the control of nervous symptoms, all of which are amenable to those same physiological rational processes. The practical application which has recently been made of these truths by gynecologists in the cure of otherwise intractable cases has awakened a great interest in the further study of this subject.

Bearing in mind that the primary effect of cold on the circulation is the same as the secondary effect of heat, we may, by alternately applying both the heat and cold, intensify both the primary and secondary effects of each.

By continuing these reaction effects of hot and cold for a time a condition of tonic reaction becomes permanent, and we do not hesitate to say that the modern therapeutist has no greater resource for raising the vital tone of the body, as a whole, than is found in the alternate use of heat and cold.

By the scientific use of heat and cold the heart is strengthened, the capillary circulation quickened, tissue metabolism is increased, muscular tone is raised, respiration is deepened, elimination is made more rapid, the blood count is increased —both red and white—(*Winternitz*); the nerve centers are energized, peristalsis is more regular and vigorous, (*Kellogg*), and every vital process manifests a higher tone, so that the defenses of the body against all forms of disease are greatly increased.

It is time our medical colleges awakened up along the line of physiological therapeutics. There should be a chair of hydrotherapeutics in every medical school, every hospital should bring to its aid these potent resources, and every student should be thoroughly taught the scientific principles, and be made familiar with the practical technique of hydriatic procedures; which, instead of being adapted to the use of charlatans and empirics, is that department of medical science where empiricism should find no quarter; a field in which the broadest knowledge is demanded, the shrewdest observation of every physiological process is required, and a field in which the most brilliant results may be achieved.

HYDROTHERAPY IN TYPHOID FEVER.*

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DERIVATION—The word hydrotherapy is derived from the Greek ὕδωρ, water, and θεραπεία, medical treatment, or θεραπένω, I heal.

Definition—Foster defines hydrotherapy as "the systematic use of water as a curative agent." Baruch again defines it as "the method of applying water in disease." It has been the mistake of many physicians to restrict this term to the application of cold water, but in the words of Baruch, "Hydrotherapy includes the application of water in any form from the solid and fluid to vapor; from ice to steam; internally and externally."

History—The use of water in the treatment of disease and of fevers is as old as the history of man; but the scientific use of water externally was first proposed in 1786 by James Currie of Liverpool, who used it in all forms of continued fever. Currie also employed a self-registering thermometer and preferred salt water on account of the stimulating effect of sea salt on the vessels of the skin. In the first five days of the fever he used water at a temperature of 40° to 50° F., saturated with sea salt. In feeble cases he used water without salt at a temperature of 15° to 20° F. below the normal temperature. In 1805 over 800 cases of typhus fever, during an epidemic among the French prisoners at Stapleton, were treated by this method, with a mortality of only 5 per cent, which results were as good as those obtained in more recent years. In 1861 Ernest Brand of Stettin became an enthusiastic advocate of the cold bath in typhoid fever, and this method has been followed from that time to the present writing with a success which has excelled that of any other method of treatment.

MODIFICATIONS OF THE BRAND BATH.

Many modifications of the Brand cold bath have been suggested and employed by various writers and clinicians, such as the graduated bath of Von Ziemssen; the continuous tepid baths of Riess; ablutions and moist compresses; the cold pack; the ice pack; frequent spongings with vinegar and water or alcohol and water; sprinkling or showering with cold water, and the use of gauze over the entire body, kept wet with water at the temperature of the room. As adjuncts to the bath the Leiter coils or the ice bag may be applied to the head, chest or abdomen. Ice-water enemata have been tried, and they will often cause a reduction of 2° or 3° in the axillary temperature. Large draughts of cold water are of value, and will be an aid in causing a fall of temperature. Hypodermatoclysis has also been used to advantage as a restorative and stimulant, and as a diluent of the toxins of typhoid. All of these methods may be employed with advantage in individual cases, but the fact still remains that Brand's method so far has been followed by the best results and the modifications of his treatment cannot show the immense number of cases treated and the same percentage of recoveries as are obtained by the strict Brand bath. It is often the case that the very men who have opposed this method, and have disputed its success, are those who have either wilfully or ignorantly followed his method imperfectly, or have offered substitutes which have not stood the test of general practice or clinical experience. There seems to be a consensus of opinion among the best medical writers and clinicians of the present time that the cold bath is the safest, best and most successful mode of treatment that we have in typhoid fever, and that this method should be *strictly* followed if we wish to obtain the same good results that hundreds of observers have recorded in both private and hospital practice.

It is now a fitting time to consider the statistics of typhoid fever, and the various methods of treatment given in these statistics, and to draw our own conclusions from these figures, which are taken by Baruch from French, German, English and American hospital reports, and also from the records of private practice:

STATISTICS OF MORTALITIES IN TYPHOID FEVER.

	Per Cent.
First year after the Civil War, army statistics	49
N. Y. City Board of Health, 1876-1885, 7712 cases	41.28
In four years of Civil War, 74,000 cases treated on the expectant plan	35.6
From 1849 to 1866, French army	32. 2
From 1849 to 1866, Italian army	28.6
From 1849 to 1866, Austrian army	27.4
From 1849 to 1866, Second Prussian Army Corps, Official Records, 1970 cases	26.3
Tripier, Lyons hospital, 1866-1877, 229 cases expectant	26.2
From 1849 to 1866, English army	23.8
Vienna, 17,000 cases	22.5
Delafield Reports, 10 years of expectant treatment among 1305 cases in various New York hospitals	20 to 30
Brand, various sources, expectant, 11,124 cases	21.7
Vogl, Munich Military Hospital, 1841 to 1878, all kinds, chiefly expectant, 5484 cases	20.7
Pennsylvania hospitals in 20 years	19.5
New York hospital, 1877 to 1899, 501 cases	19.4
Jaccoud collected over 80,000 cases, treated on expectant plan	19.23
Nearly 14,000 London hospital cases	17.8
Murchison reports 27,000 cases, expectant	17.45
Tripier, Lyons hospital, 1873-1881, expectant and bathing, 629	16.5
Presbyterian hospital, N. Y., 1882 to 1890, 250 cases	16.1
Hare, Brisbane hospital, 1882-1887, 1828 expectant, quinine and cold wet sheet	14.82
Wilson German hospital, Phila., expectant and some baths, 271	13.29

* Read before the Medical Society of the State of California, at the annual meeting, held in San Francisco, April 14 to 17, 1902.

Vogl, Munich Military Hospital, 1868-1881, expectant and baths, 2841 cases	12.2
Ziemssen, Tubingen clinic, graduated baths and antipyretics, 2000 cases	9.6
Riess, Berlin hospital, permanent tepid baths, 1000 cases	8.5
Vogl, Munich Military Hospital, 1893, baths of 59°, 426 cases	8.4
Hare, Brisbane hospital, 1875-1881, cold baths and some antipyretics, 1173	7.84
Brand reports 19,000 cases of cold baths of all kinds	7.8
J. C. Wilson, German hospital, Phila., strict cold baths, 408 cases	7.8
Vogl, Munich Military Hospital, 1877 to 1887, strict cold baths and antipyretics, 702 cases	7.6
Hare, Brisbane hospital, 1887 to 1896, strict Brand, 1902 cases	7.05
Naunyn, Konigsberg clinic, strict cold baths, 145 cases	6.9
Murtra, Australia, strict cold baths, 173 cases	5.4
Sihler, private practice, strict cold baths, 80 cases	5.00
Tuttle, New York hospital, 1893, strict cold baths, 766 cases	5.00
Vogl, Munich Military Hospital (2d division) 1882-1887, more strict baths and less antipyretics	4.1
Brand, 5573 cases from various German and French sources, more thoroughly and systematically treated	3.9
Vogl, Munich Military Hospital, 1882-1887, strict cold baths, 141 cases	3.5
Bouberet, Lyons Red Cross Hospital, 1891, strict cold baths, 100 cases	3.0
Vogl, Munich Military Hospital (1st division), 1880, strict cold baths, 428 cases	2.7
Brand, various sources, strict cold baths, 2198 cases	1.7
Brand, Vogl, Jurgenson and others, 1223 cases, baths	1.00
J. C. Wilson, German hospital, Philadelphia, 94 cases	.94
Brand reports 2150 cases treated before the 5th day	.00
Borning, private practice, strict cold baths, 61 cases	.00
Barker, private practice, strict cold baths, 35 cases	.00
Baruch, private practice, strict cold baths, 32 cases	.00

It has been said with some justice that you can prove anything by figures. By perusing this table, however, I think we can come to some definite and just conclusions which may be a guide to the estimation of the value of hydrotherapy in the treatment of typhoid. For example, Hare reports 1828 cases in the Brisbane Hospital, treated from 1882 to 1887 by the expectant methods, quinine and cold wet sheet with a mortality of 14.82 per cent. In the same hospital 1173 cases were treated with cold baths and some antipyretics, 1875-1881, with a mortality of 7.84 per cent. In the same hospital, 1887 to 1896, strict baths according to Brand, 1902 cases mortality, 7.05 per cent. Hare after giving these figures recommends this method as the best yet given for the treatment and cure of this dread disease.

The official records of the Second Prussian Army Corps showed the mortality from 1849 to 1866 in 1970 cases to be 26.3 per cent, which was reduced by a strict cold bath treatment among 2714 cases to 4.3 per cent. During this same period the mortality in the French army was 32.2 per cent; in the Italian army 28.6 per cent; in the Austrian, 27.4 per cent, and in the English 23.8 per cent. It is only fair to conclude that correspondingly good results would have been obtained in the English, French, Austrian and Italian hospitals as Brand obtained in the Prussian service. Six times as many lives were saved by the cold baths as were saved under the old methods of treatment.

Again, the reports of the Lyons Hospital show expectant treatment, giving a mortality of 26.2 per cent; expectant treatment and bathing, a mortality of 16.5 per cent, while strict baths in severe cases showed a mortality of only 6.9 per cent. Wilson of the German Hospital, Philadelphia, reports expectant treatment and some baths, followed by a mortality of 13.29 per cent, while the treatment by strict cold baths showed a mortality of only 7.8 per cent.

Dr. Osler gives the statistics for six years, ending May, 1895: Cases admitted before the introduction of hydrotherapy, 33; mortality, 24.2 per cent. Cases admitted since the introduction of hydrotherapy, 356; mortality, 6.6 per cent. He also concludes that for this fever and its concomitants there is no treatment so efficacious as that by cold water, and follows in his clinic a rigid system of cold baths.

Sir Wm. Broadbent believes that the systematic use of the bath has considerably reduced the mortality of typhoid fever. Dr. James Tyson writes as follows:

I have been so satisfied from my personal experience with this method—that it is without doubt greatly superior to any other in the results attained by it—that I feel impelled to do what I can to extend its use.

Dr. Delafield pronounces the tubbing treatment as the best we now have. Strumpell says:

There is at present no other single method of treating typhoid fever which has so numerous and evident advantages for the patient. To carry it out in private practice may often be more difficult than in a well appointed hospital. However, even in private houses it will generally be possible to manage it, and we regard it as the duty of every physician who undertakes to treat a severe case of typhoid to try his best to have the baths employed.

Anders says:

There is at the present day general agreement among medical authors that the best mode of treating typhoid fever is by means of the *cold bath*.

The results reported by Wilson, Borning, Barker and Baruch in private practice are certainly sufficient answer to those who say it may be well enough in large hospitals, but it is impractical or impossible in the houses of the poor.

Dr. Carl Sihler of Cleveland, Ohio, who has

followed this method extensively in his private practice and among the laboring classes, speaks highly of the treatment and says:

With this method a powerful means for good is placed in the hands of the physician, and I would no more think of placing any one dear to me personally, suffering from typhoid fever, into the hands of a physician who does not act according to the principles of Brand, than one who had to undergo an operation into the hands of a surgeon who does not act according to the principles of Lister.

Dr. A. B. Ball, professor of clinical medicine in the College of Physicians and Surgeons, New York, has been convinced that there is no other method at command which is so valuable.

Dr. W. Gilman Thompson describes his own experience while being treated by the Brand method for typhoid:

It is not agreeable at any time to be taken out of a warm bed and suddenly immersed in cold water, but the after-effect was so soothing, and the favorable influence upon all the symptoms was so pronounced, that the temporary discomfort was easily endured.

Professor Gerhardt, of the University of Berlin, claims that the Brand method has reduced the mortality of typhoid to one-quarter of its former rate.

There are four conditions in typhoid fever which endanger life: 1, (H. C. Wood) The bacterial toxins or typho-toxins produced by the typhoid bacillus; 2, The local action or ulceration produced by the bacteria; 3, (H. C. Wood) The fever or elevated temperature; 4, (H. C. Wood) The starvation or underfeeding.

Liebermeister taught that the high temperature itself was followed by severe complications which endangered life, such as stupor, degeneration of the heart and kidneys, and trophic disturbances. Von Ziemssen, however, held that these conditions were produced by infection rather than by the temperature. Dr. A. L. Loomis believes that the heart failure is due as much to the impairment of the nervous supply as to degeneration of the heart muscle.

Dr. Wesley Carpenter, in making many autopsies, did not find degeneration of cardiac structure so common as is generally believed. It is a fallacy that high temperature is the chief cause of the high mortality in typhoid fever. The failure of the heart may be caused in part by the temperature, but there are other and more potent factors. Infection or intoxication, due to sepsis or the typhotoxins caused by the bacillus, diminish perspiration, the activity of the kidneys, the peristaltic action of the intestines, and affect all the nerve centers. The cold bath acts as a direct stimulus to the nerve centers controlling the circulation in the arteries, veins and lymphatics; digestion, nutrition, secretion and excretion are thus directly affected and improved.

THE COLD FULL BATH.

Brand of Stettin was the originator of this, which is the ideal bath in typhoid fever. His directions are simple and his method most successful. It has been tried in every country and all climates, and as yet no other single method of procedure has been so extensively used as his. Over one hundred thousand cases in the totality show a percentage of recoveries at the very least double that of any other method. The portable bath is the best and most convenient. It should be of sufficient size to allow the complete submersion of the patient, so that the water touches the lower part of the chin. The buttocks rest upon a water cushion ring and the head rests upon an air cushion or may be supported by the nurse. Water from 90° F. to 65° F. may be used, but in a strict Brand bath the water is at a temperature of 65° to 70° F.

TECHNIQUE OF THE BATH.

The patient is given a stimulant, either whisky and water or a cup of hot broth, and then stripped. The face is quickly sponged in ice water and the patient is then gently lifted by two assistants and lowered into the tub; under no circumstances is it permissible for the patient to walk to or from the bath. Every part of the body, except the abdomen, should now be vigorously chafed and rubbed. Rubbing along the spine and the back of the neck will often relieve the feeling of cold and shivering, while chafing the legs will either prevent cramps and pains or greatly relieve them. If there be a decided chattering of the teeth or cyanosis of the face, the bath should be discontinued at once. Several times during the bath water at a temperature of 50° F. is poured over the patient's head. By wrapping a towel around the head we may prevent the water passing over the face and add greatly to his comfort. After the patient has been in the bath 10 to 15 minutes he is removed to his bed, which has been prepared in the following manner:

A double blanket is placed upon the bed and over a pillow, which is covered with a double thickness of crash toweling; over the blanket is spread a sheet, preferably of linen on account of its better powers of absorbing moisture, and at the foot of the bed several hot water bottles are placed. The patient is lifted into his proper place and wrapped with the sheet in such a manner that the arms and legs do not come to contact with wet surfaces. The blanket is then thoroughly wrapped over the entire body and if the rectal temperature has been 103 or over he is allowed to rest 5 or 10 minutes; if not, he is immediately rubbed dry and warmly covered. It is now often advisable to give hot whisky or hot broth. If shivering is prolonged and reaction slow in coming on, it indicates that the temperature of the bath is too low or that the bath has been used for too long a period. Careful notes should be taken and the next bath regulated ac-

cordingly. Brand advises the bath when the rectal temperature is 102.5 and its repetition every three or four hours when necessary. The rectal temperature is taken one-half hour after the bath is finished and again in one-half hour, when it is often found that there has been a fall of two or three degrees. When in severe cases the fall is only one degree, it is advisable to prolong the bath to 20 minutes or reduce the temperature of the water. In light cases it may not be necessary to give the bath more frequently than every four or six hours. It is advisable to permit the patient to sleep during the night for six or eight hours when possible. High temperature is not of itself the gravest symptom of typhoid, as we all have observed cases in which the temperature remains high and yet in other respects the fever pursues a mild course. However, when the temperature remains high for a long time, or when it suddenly becomes very high. it is necessary to take active measures to reduce it.

Strumpell says, "The early appearance of stupor and delirium in a given case means that for that patient the fever is high and should be treated." The rapidity of emaciation, the respiration, the pulse and condition of the heart and the nervous symptoms may be more important guides than the temperature in the treatment of a given case.

OBJECTIONS TO THE BATH.

(1) The labor and expense. These are decided objections, but the good results obtained in the houses of the laboring classes by many practitioners, and that, too, by the help of untrained and ignorant assistants, should be sufficient answer to such objections. In surgery and in the serum treatment of diphtheria expense and labor have never, for one moment, been spared, and the results have certainly more than compensated all those who have followed the best methods of treatment.

(2) Conservatism. Conservatism on the part of the profession may be a great good, but this should not stand in the way of progress, and should not oppose prejudice to statistics gathered from every source and the consensus of opinion of the best medical writers and authorities of the present time.

(3) Opposition of the public. The opposition of the public, of the patient and his friends may be obstacles insurmountable; but it is our duty to overcome those obstacles, if possible, and to educate our patients to follow the advice of their physicians and the medical profession rather than that of the public, which is ignorant and incompetent to judge concerning matters medical and surgical.

(4) The harshness and cruelty of the bath is urged by many who do not believe or only weakly believe in its efficacy. In such cases we may begin with the warm bath and gradually accustom the patient to the method, and in a short time he himself will be convinced of its value. This is only a matter of sentiment, and should not stand in the way of the patient's recovery.

(5) The drug antipyretic method has had a large following who believe that the main object of the bath was to reduce temperature; this, however, is only one of the objects of the bath and often the least important. These physicians have honestly believed that they had a more simple, convenient and reliable agent in antipyretic drugs; but as we all know this treatment is not now accepted by our leading writers, and the statistics so far collected do not bear them out in their position.

(6) Another class of physicians opposed to the bath are those who follow the methods of Brand imperfectly and half-heartedly, or have resorted to packing, sponging, sprinkling and ice packs. They have often failed, and in this manner have become opposed to the method as unreliable and unsatisfactory.

(7) The physicians of the expectant school, who do not believe that any system of treatment will modify the course and mortality of typhoid fever, and rely upon nursing and the treatment of symptoms as they appear. To such we can only say that the method has been tried on thousands of cases and that overwhelming statistics are opposed to them and their theory.

(8) The antiseptic method of treatment seems to many to be logical and scientific, but this method alone cannot stand in opposition to the bath treatment. It may be used in addition to the baths and such other drugs as the physician deems necessary in the treatment of the individual case.

(9) A limited experience in the use of the bath should not, at the present time, oppose us to this method. We know that we must rely upon the experience founded upon thousands of cases rather than the observation extended over a limited field. The results obtained in large hospitals and in the experiences of many observers is the only safe guide for any plan of treatment.

(10) The difficulty or impossibility of treating cases before the fifth day. While Brand lays great stress on beginning the treatment early, still he and his followers believe in its use at all stages of the fever.

(11) Shock. It has been urged that the shock from the cold water is too severe and dangerous; but this is one of the chief advantages of the bath, as it stimulates the heart and improves the circulation and acts upon all the vital centers.

(12) Danger of colds and lung troubles. Vogl says "The fear of cold from the baths or cold air in typhoid fever is unfounded." One of the main objects of the bath is to overcome the

tendency to congestion of the lungs and its attendant pulmonary complications.

(13) Complications. It has been stated that the cold bath by chilling the surface and congesting the internal organs has a tendency to increase the number of cases of intestinal hemorrhage. Extensive statistics prove just the contrary. "The diminution of the intestinal symptoms is a very evident effect of the cold bath: a few trials will convince any one of its success." (Vogl.)

(14) It has been charged that more cases relapse after this method. I cannot find any statistics bearing upon this point. Baruch observes that this is probably true, as there are so many more survivors to relapse.

(15) Baths do not shorten the duration of the fever. This is no doubt correct, but they certainly greatly modify the temperature, tympanitis, tremor, wasting and other complications, and greatly diminish the percentage of mortality.

BENEFICIAL EFFECTS OF THE BATH.

(1) The blood is cooled at the surface by the direct absorption of heat and the cooled blood acts as a tonic on the heart, thus improving circulation, and the cooling of the brain induces sleep. (Anders and Von Z.) The reduction of the temperature, usually more noticeable after one or two days' treatment, overcomes the ill-effects of high temperature.

(2) It improves the general nervous symptoms, such as delirium, stupor, and mental dullness, muscular twitchings and tremors, and causes sleep. This condition is brought about by the shock of the cold, and the constant rubbing acting upon all the nerve centers and the general nervous system. Even when the temperature is only slightly reduced a marked improvement in all these nerve manifestations is often noted, showing that the reduction of temperature is not the most important result of the bath. (Osler, Thompson and Baruch.)

(3) It strengthens the action of the heart by direct stimulation of the heart nerve centers and by the improvement of the peripheral circulation. It thus diminishes the dangers of a sudden collapse of the circulation, due to cardiac weakness, and in this manner prevents hypostatic congestion of the lungs and venous thrombosis. (Anders.)

(4) Through improved enervation and circulation all the digestive functions are improved. The tongue becomes moist and clean, and the flow of saliva and gastric juice is increased; the appetite and digestion are improved, the tympanites diminishes, the stools become more natural and the wasting of all tissues decidedly diminished. (Wilson, Anders, Baruch.)

(5) It improves the respiration and increases the depth and length of the inspiration. The tendency to severe bronchitis, pneumonia and hypostatic congestion is greatly diminished. (Anders, Thompson and Osler.)

(6) The renal action is improved; the flow of urine increased and the excretion of urea stimulated, thus eliminating the toxins of the fever and decreasing the danger of albuminuria and general intoxication. (Anders, Brand, Vogl and Tyson.)

(7) On account of improved cleanliness and improved circulation bed sores are seldom seen.

(8) When the bath is used in the first week it greatly modifies the course of the fever and renders it free from many of the graver complications, and greatly diminishes the mortality.

(9) Rorighi, Winternitz and Thayer claim, after much investigation, that hydriatic applications have a direct action upon the blood, increasing the red blood cells, leukocytes and hemoglobin.

(10) The functions of the skin are most important: First, as an organ of sense having direct communication between the outside world and the central nervous system; second, an organ of excretion. Water, carbonic acid gas, urea and other waste products are thrown off by the skin; bacteria in certain septic conditions have also been found in the perspiration. The skin is one of the most important aids to the kidneys and free diaphoresis is a common method of eliminating poisons; third, as a heat regulator. The skin is of the greatest importance and in fact indispensable in maintaining the bodily temperature at its normal point. All these vital and essential functions of the skin are stimulated and increased by the cold bath. Free diaphoresis is one of the most important effects of the bath, and by it the bodily temperature is reduced and waste products caused by the high temperature are eliminated.

W. Gilman Thompson, and in fact all the advocates of the bath, lays great stress upon the mechanical stimulation of the skin during the bath. They claim that it acts as a direct stimulant on the nerve centers and the vaso-dilator nerves of the periphery. In this manner the circulation of the blood in the skin itself is greatly enhanced and a greater amount of blood comes to the surface and is directly cooled by the contact of the water reducing the temperature. It diminishes the shivering and discomfort while in the bath and relieves the cramps and pains in the legs. The first action of the bath is to cool the surface and contract the peripheral blood vessels so that the pulse becomes almost imperceptible; this should not alarm the physician or attendants. There is now an increase of the blood pressure and the internal organs are filled with blood. The peripheral blood vessels next relax and the high blood pressure remains unchanged.

The heart acts more slowly and more vigorously, and all the blood vessels recover their elasticity and the tendency to a dicrotic pulse is decreased.

CONDITIONS WHICH DO NOT CONTRA-INDICATE THE BATH.

(1) Menstruation, pregnancy and the puerpural condition do not contra-indicate the bath. Many have employed the bath with great benefit in such cases.

(2) Erysipelas and bed sores, unless there be extensive involvement of tissue which requires antiseptic dressings, need not cause us to discontinue the baths. Bed sores are often benefited by the local cleanliness and the improved circulation of the skin. In fact acute decubitus is rare when bathing has been employed in the beginning of typhoid.

(3) Nephritis—Brand, Vogl and Tyson reccommend the bath in nephritis and believe that in this condition it is especially indicated, as the bath increases the secretion of urine and the excretion of urea.

(4) Free perspiration and cramps in the legs do not forbid the bath. The pains are usually relieved and often prevented by vigorous rubbing.

(5) Severe cough and attacks of dyspnea may appear in the first shock of the bath, but they usually disappear in a short time. Cyanosis and syncope are evident contra-indications. Here the pack or the graduated bath may be employed with advantage. The cough produced by the cold bath is frequently a favorable symptom, as it is caused by a stimulation of the respiratory center and a restoration to the normal of the respiratory sensation in the bronchial mucous membranes, causing a clearing of the passages of mucous and a stimulation of the pulmonary circulation.

(6) Late cases where there is great prostration and weakness do not forbid the bath, but it should be moderated to suit the condition of the patient. This is the opinion held by Brand and his followers, but, as has been noted later, many writers directly oppose immersion when such conditions are present.

CONTRA-INDICATIONS OF THE BATH.

(1) Severe Hemorrhage—A small amount of blood is not a contra-indication of the bath, but in severe hemorrhage, with coldness, pallor and feeble pulse, such treatment should at once be discontinued. Tympanites, tenderness and bloody stools are much less common in this treatment than in other methods.

(2) The aged and enfeebled and the very young often bear the baths badly, and here some modification of the cold bath should be advised.

(3) Extreme cardiac weakness—In this condition the bath may prove fatal, as Anders has reported.

(4) Peritonitis, which excites suspicion of perforation, is an indication that the patient should be kept as quiet as possible,, and here the bath is ill-advised and should not be given.

(5) Patients that have advanced in the third week of the fever, and who are greatly reduced, should not be immersed. Under such circumstances dangerous and even fatal collapse have been observed.

(6) Perforation requires absolute rest or immediate surgical treatment, and the baths must be withheld at once.

(7) Severe pneumonia or pleurisy frequently contra-indicate the bath. But in both these conditions where there is stupor, delirium, trembling and rapid emaciation, indicating severe toxin poisoning, the bath has been used with great benefit. Where the physician is in doubt, it may be advisable to use the warm bath or sponging with cooling lotions.

(8) In certain very nervous patients, where there is great dread of the bath, some milder method must often be resorted to.

(9) Tripier and Bouveret report five cases where the bath had to be withdrawn on account of severe coughing and dyspnea.

CALIFORNIA METHODS OF TREATMENT.

A circular letter was addressed to prominent medical men in various parts of the State in order to learn their methods of treatment, their views in regard to antipyretics, intestinal antiseptics, hydrotherapy and the Brand baths. Many objected to the method of Brand and their reasons were given in their replies:

The Best Method of Treatment of Typhoid—Hydrotherapy and Intestinal Antiseptics:

	Per Cent.
Employed by	54.05
Hydrotherapy (alone)	17.55
Brand (alone)	10.82
Brand and Woodbridge	6.76
Brand and intestinal antiseptics	5.41
Hydrotherapy and Woodbridge	5.41
Brand's method approved by	60.81
Brand's method not used or approved by	39.19
Various objections offered to Brand's method by	54.05
No objections	32.43
No opinion expressed	13.52
Drug antipyretics condemned by	81.08
Various antipyretics such as quinine, acetanilid, phenacetin and guiacol externally used by	18.92
Intestinal antiseptics, calomel principally, used by	78.38
Condemned	18.92
Used occasionally or with indifference	2.70

Water is used in some form internally and externally in all cases, and hydrotherapy is thus approved to some degree by all those replying. Only one approved of the serum treatment. Good nursing, careful diet, fresh air and strict hygiene were considered by all of the greatest importance.

HYDROTHERAPY IN THE TREATMENT OF PNEUMONIA.*

By A. J. SANDERSON, M. D., San Francisco.

HYDROTHERAPY, in the treatment of chronic diseases and fevers, has been acknowledged to be a stable remedial measure, but its use in many acute diseases has not received the attention that it justly deserves. Its application in the treatment of pneumonia is in many respects quite unique. In no disease is it capable of producing more brilliant results. This may be explained because pneumonia is a disease that is usually well-defined, with a distinct clinical picture, and the effects of a course of treatment are accurately registered in respiration, pulse, and temperature.

In dealing with hydrotherapy in this disease, it is very essential that a course of treatment should be scientifically prescribed and carefully administered. The application requires exposures and manipulations, which, in the hands of an ignorant or careless nurse, are liable to give rise to complications; but when thoroughly and skilfully administered can be given without inconvenience to the patient, and with only good results. It is important that during a course of treatment the results should be carefully watched by the physician, or it should be in the hands of a nurse whom he knows to be fully competent. This will necessitate frequent visiting of the patient during the critical period of the disease, or the nurse must have had sufficient experience to understand when a change or discontinuance of a form of the treatment is indicated.

In general practice, one is often handicapped by not having appliances at hand for the administering of the proper treatment. This is best overcome by having the nurse possess the simple equipment, which need only be a few large flannel cloths, two hot water bags, three or four ice-bags. Cloths for compresses, and a woolen blanket, if needed, can always be found in the home. These, with plenty of hot and cold water, and a supply of ice, are all the appurtenances that are necessary.

No general prescription can be given for the treatment of pneumonia; each case must be studied by itself; and the treatment given as indicated, taking into consideration the general recuperative and resistive powers of the individual, as well as the existing disease. During the course of treatment, aside from sustaining the functions of the lungs and heart, there are three conditions to be combatted, viz., the extension of the inflammatory area, the engorgement of the lung tissue, and the accumulation of toxins. These indications are, to a great degree, met by diverting as much blood as possible to other parts of the body. If this can be accomplished, and the action of the skin and kidneys stimulated, much will be done to lessen the severity of the pneumonia and aid the crippled pulmonary functions.

If called to a case of pneumonia about the stage of the initial chill, and we have a strong, robust patient to deal with, it is best to give a full body pack. Augment the heat by placing hot-water bags outside the blankets about the extremities. Keep cool compress on the head, and if engorgment of the lung has already been sufficient to particularly depress respiration, keep a cold compress, or an ice compress, upon the chest while this treatment is being given. If possible, get the patient to perspire freely. The accomplishment of this will be greatly facilitated by having him drink a quantity of hot water. The favorable effects to be obtained are increased elimination of toxins, the diversion of the blood from the lungs to the extremities and the peripheral vessels. Following the pack, the patient should be placed, without exposure, into a warm bed, and local treatment to the chest continued.

If when called to the patient the pneumonia has reached a more advanced stage, or we have a feeble person to deal with, the effect of the above treatment can be largely obtained by giving a hot pack to each limb, with the hot-water bag to the spine; or, a less inconvenient method, with the patient lying on his back, and legs flexed at right angles, give a hot foot-bath beneath the bed covers, also with a hot bag to the spine. Such treatment can be continued twenty or thirty minutes, or until the desired effect is produced. When this treatment is properly administered, the patient should experience marked relief from the symptoms, and the respiration should become freer. Accompanying the above measures, begin the local treatment to the chest. This consists of cold applications, interrupted by the use of heat. In giving these, care should be taken not to expose the neck and shoulders. They should be covered by warm, dry flannel. Also have warm flannel with which to cover the chest, so as to exclude air while the compresses or applications are being renewed. Hot applications in the form of poultices or fomentations are commonly prescribed in our textbooks, but in the average case, cold applications will accomplish much more marked results. This has been successfully demonstrated by Dr. Mays, of Philadelphia, and others. When extreme cold is used, care should be exercised not to continue the applications too long, and they should be temporarily or permanently withheld when progressive improvement ceases.

I have found the most satisfactory results to come from the alternate hot and cold treatment. First thoroughly apply fomentations to the chest, changing as often as they become the least cooled,

* Read before the Medical Society of the State of California, at the annual meeting, held in San Francisco, April 14 to 17, 1902.

and continuing the application for twenty or twenty-five minutes. This should be followed by cold compress to the chest, which should remain during the interval between the fomentations, varying, according to the case, from one to three hours. If the temperature of the body is high, the compresses should be changed as fast as they become warm. If the pulmonary inflammation is especially active, it is well to apply ice compresses between the fomentations, in which case the latter may need to be repeated as often as every hour.

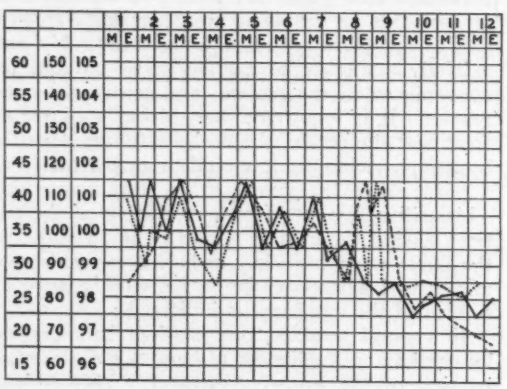
In some cases, and in some stages of the disease, the cold applications are not well borne, at which times it is my practice to cover the chest during the interval of hot applications with compresses of alcoholic solution of menthol. The cold applications are a good stimulant to the functions of the respiration, and the heart's action. I have seldom found it necessary to use any other means to stimulate these organs. They also have a marked effect in increasing local leukocytosis. This increase of oxygen by deeper respiration, and the increased number of leukocytes, are both powerful agents for combatting the disease.

For the reduction of the temperature, the use of alcohol rubs, cold sponges, cold mitten friction, with neutral and cold bowel irrigation, when thoroughly applied, will be found sufficient. Having the patient retain one or two pints of cool normal salt solution after the irrigation, for absorption, will have a favorable influence on the temperature, and by increasing the volume of the blood and stimulating the kidneys, will favorably affect the disease process. The severity, extent, and frequency of both the hot and cold treatments must be determined by the examination of each case, the general condition of the patient, and the clinical picture it presents. If the hot fomentations to the front of the chest are not sufficient to relieve the engorgment of the lung and the breathing, the effect can be augmented by the application of the hot bag, poultice, or another fomentation to the back of the chest, applied at the same time or alternately with it. I sometimes find it an advantage to have this application of heat to the back of the chest, while the cold or ice compress is being applied anteriorly. In the latter stage, to aid resolution, after the temperature has become normal, I use the rapidly alternating hot and cold application to the chest, cold mitten friction, and light massage as tonic measures to hasten the reparatory process.

During the treatment, the patient is kept on a mild liquid diet, and if the enemas are not sufficient to clear the bowels from any clogging that may have been present in the early stage of the disease, I give one or two doses of castor oil. Other than this, no medicine is used. With this routine of treatment we have never lost a case of primary pneumonia. A partial report of the following cases will give a clearer idea of the application of the treatment:

Miss F. A., aged ten, came home from school in the afternoon, taken with a severe chill, following which the temperature reached 105, with a pulse of 130, respiration 35. Physical signs were not well marked. The patient was given the initial treatment as above described. Within two days the characteristic physical signs of lobar pneumonia were well marked in lower lobes of both lungs. The pneumonia ran a characteristic course, passing the crisis of the disease in each lung separately, on the fifth and seventh days, at which time the high temperature, pulse and respiration dropped suddenly to nearly normal, the first time only remaining there a few hours, but after the second crisis they remained normal, and the child made a rapid recovery.

Mr. S. W., aged 73; patient feeble; pulse very irregular. Was called to the case February 3, 1900. Patient had been suffering, as he supposed, from a cold, for several days, and had taken treatment and cough medicine, of home prescription. Examination of the chest revealed bronchial pneumonia, affecting the right lung. The age and feebleness of the patient complicated the disease. The accompanying chart will give an idea of the results obtained by the



FULL LINES. TEMPERATURE———
DOTTED LINES. PULSE .....
DASH LINES. RESPIRATION - - - - - - - -

treatment. During the first two days no extreme cold was used, on account of the feebleness of the patient; but as no progress was made, the treatment was changed and thorough application of the hot and cold, using water at 35° F. was made every two hours. The marked improvement in respiration, pulse and temperature, are clearly indicated by the chart. After the second day, the application of the cold seemed to lose its control over the disease, and temperature and pulse returned, at which time we again applied poultice, giving hot and cold applications three times a day. Favorable results followed, and the temperature gradually returned to normal, and patient made good recovery. The rise in pulse and respiration on the eighth and ninth days was due to cough and free expectoration during resolution, which was indicative of the feeble condition of the patient. I report this case by chart because it is quite characteristic of a number of cases. The cold application when intelligently applied, will, in the average case, accomplish a great deal towards abating the symptoms, but one should guard against the applications being too frequent or too long continued, as they may, especially in the feeble patient, or one having

organic heart trouble, lose their tonic and antipyretic effect, and a period of depression with exaserbation of the symptoms may follow. But when this is watched closely, none of these deleterious effects need occur, and the good results obtained by the cold will become permanent.

The following case was simply acute congestion of the lungs, with extremely difficult respiration. Miss M. D. Was called to the case at 2 a. m., March 5, 1902. Found patient suffering with severe dyspnea, and incessant cough, and perspiring freely. Gave history of having suffered pain in left chest for some days. The evening before, the pain became intense, the cough developed, and shortness of breath extreme. Respiration, 30; pulse, 120; temperature, 102. Examination of the chest revealed coarse rales throughout both lungs, more marked on right side. At the bottom of the left lung there was impaired resonance on percussion, and partial obliteration of respirating murmur. The patient was given a hot foot-bath, with hot water to drink, thorough fomentations were applied over the chest, and hot bag to the spine. The cold applications were not well borne in this case, as they would immediately increase the oppressed breathing when applied. This may have been due to a very slight mitral murmur that was present. The hot applications were continued steadily for eight hours. At the end of that time the breathing was relieved and the cough checked. Menthol compresses were then applied, and the fomentations repeated every two hours. At the end of twenty-four hours the temperature was normal, the rales had largely cleared away, with the exception of the lower part of the left lung. This portion of the lung cleared entirely by the end of three days' treatment.

METHODS OF APPLYING ABOVE TREATMENT.

Full Body Pack—Spread comforter over the side of the bed, or preferably on cot beside the bed; spread blanket over this, and upon it unfold the blanket that has been wrung out of boiling water; as soon as the bare arm can be borne upon the blanket, have patient lie quickly in the center of it with arms close to the body; wrap one-half of blanket over body, then the other half; fold over the dry blanket that is underneath, also the comforter. The hot blanket should be of sufficient length to fold in well over the shoulders, and about the neck. Also wrap about the feet, so as to keep them warm, and exclude the air. The quicker the patient can be wrapped up so as to exclude the air, the less discomfort he will feel from the heat. Leave patient in the pack twenty or thirty minutes, or longer if favorable effects are produced. Should the patient not perspire, and the temperature have a tendency to rise, and the tendency to chill has ceased, sponge the body briskily with cold water before the patient is replaced in bed. In giving the sponge, expose only a small portion of the body at a time, and see that there is no tendency to chill.

Leg Pack—Have blanket wrung out of hot water the same as for the full pack. Then turn the bed clothing away from the extremities, spread dry blanket beneath them, and unfold the hot blanket upon it. Wrap first the hot blanket, then the dry one, about the limbs, and replace the bed clothing. Each leg may be wrapped separately with more comfort to the patient. The hot blanket should be wrung sufficiently dry so that it cannot drip and wet the bed.

Fomentations—Take large flannel cloth, preferably one-quarter of a single blanket; fold to a convenient shape for applying over the affected part; then dip in boiling water, leaving ends dry, so that by them the cloth can be wrung sufficiently dry that water cannot drip from it. Wrap this in another fomentation, leaving one thickness of dry cloth beneath the hot one, and apply to the affected part. Change every two or three minutes, or as often as the cloths lose their excessive heat.

Cold Compress—Take cotton or cheese cloth sufficiently large to fold into several thicknesses, and have an area that will cover one-half of the chest, extending from the apex to the base of lung, and from the sternum to the spine. Dip this in water at 60° F., drain sufficiently dry that it will not drip, and apply to the chest, covering with a dry flannel cloth, or preferably oiled silk. Change the compress every fifteen minutes, or as often as it becomes warm. In some cases better effects will be obtained by having the compress colder, being wrung out of water at 50°, 40° or even 32° F.

Ice Compress—Take four ice-bags filled with chipped ice, tie securely, and wrap in a Turkish towel, with the bags about three inches apart, and one or two thicknesses of towel beneath them. Apply to the affected part.

Cold Mitten Friction—Make mitten of Turkish cloth to fit the hand. Have the water as cold as can be borne well by the patient, and have a good reaction obtained by the friction; temperature will vary from 80° to 50° F. Dip hand, with mit applied, in water, and shake off the excess. Expose a small portion of the body; rub briskly with the cold mitten till some redness of skin appears and part feels warm. Keep surrounding clothing covered with Turkish towels so that dripping water will not dampen it. Dry with a Turkish towel. Cover the part, and repeat operation on other portions of the body.

Hot and Cold Applications—Use ordinary fomentations as above described, and about every half minute lift fomentation cloth and rub the chest for two or three seconds with a smooth piece of ice.

Bowel Irrigation for Reducing Temperature—Take water at 60° or 50° F. and put into it 30 grains sodium chloride to the pint. By rectal tube and fountain syringe inject one to three pints of this solution. If retained, leave in for twenty minutes, and then allow patient to pass the solution, and repeat the injection. Have the patient

retain the last solution, using a less quantity if necessary, so that it may become absorbed.

DISCUSSION.

Dr. Geo. L. Cole, Los Angeles—I feel much gratified by this paper. It is rather interesting at this time, when the profession is reaching out for new remedies, to have brought to our notice something which is easily applied, something which is not new, except the application, and something which has stood the test of time. I think that instead of devoting so much time to grasping new remedies, if we utilize this we will do better. For instance, so many new hypnotics have been placed before us; and I am sure that none of the hypnotics are equal to chloral hydrate. While there is no exception to be taken to anything that was said, there are one or two points that might be emphasized in regard to what the doctor said about the short and long application of cold and heat. In the short application of cold the reaction is quick, and is continued by the long application of the cold. What he said, furthermore, about the study of this subject, we should remember that here is something we are not as familiar with as we should be. He says the novice may think it is easy, but if he does not understand it he will not get the results.

If we do not understand the treatment we will not get the results we expect. The question of cold applications acting as a tonic cannot be better exemplified than in the Brandt treatment of typhoid fever. We have all seen, under this treatment, how the circulation is benefited, the temperature comes down, the days go by, and what was considered a critical case goes on to recovery. Many of our patients become disgusted with drugs; hence it is we have so much attention paid in these days to mental science, osteopathy, etc. The use of cold water, especially in the institutions where hydropathy is used, where the patient comes in contact with a room fitted up as in a sanatorium, where there are various methods of using it, as the bath, jet and spray, it has a psychic effect; and in many cases along the line of neurasthenia they are benefited, very much from the psychological effect, and it is proper for us to take account of this line of treatment and the effect. If I was to criticise any remark made, it was the suggestion that the authority let drop—I am not quite sure that I understood correctly, but I gained the impression—that if water was properly used we might do away with venesection. I can't believe this. The longer I practice medicine the more I am convinced that there are cases where venesection should be employed. If I have ever saved human life, I believe it was in two cases where I promptly drew 25 to 30 ounces of blood; and I believe in pneumonia, in strong plethoric persons, that in the beginning of the disease venesection will accomplish something that nothing else will. I believe also that there are cases of cardiac lesions in which if properly applied and promptly used at the proper time life may be saved, or the critical period tided over in these valvular lesions. I had one patient in whom I did this, and the patient had two years of good health, and I believe if the prompt venesection had not been used the patient would have died. In apoplectic attacks, or in some cases where the symptoms positively point to apoplexy, I do not think we can replace venesection by hydrotherapy.

Dr. H. N. Rucker of Merced—I would like to ask Dr. Hare one question for information. I would like to know if he has had any experience with it and would recommend a cold compress in surgical shock; for instance, would his idea be that the heart action would be increased by the cold? I ask this question because I have had some experience in applying very hot applications over the heart in extreme surgical shock, and where the pulse was not perceptible. I never used the cold, because I feared the effects would be disastrous, but I have seen good effects from the heat.

Dr. Hare—I am glad the gentleman asked the question referring to cold in shock. It is a question closely allied to the last reader as in pneumonia. The only effect we get from the cold is through the reaction or the reflex manifestations. When we apply cold to an area, we get reflex action from the cold immediately. That reflex action comes from the impression of the cold on the nerve centers in the skin. If we leave it on for a while, we get numbing of the skin. If Dr. Sanderson, who read the paper on pneumonia, continues the cold long enough to get numbing of the body, he will get just what we don't want in the surgical shock, a condition of partial numbing of sensibility. He took a cold compress for a short time and got bad results. We must get a reaction of sensibility. When we don't get the reaction, we aggravate it. If it is cold enough and for a short period, it will be all right. The doctor's suggestion to the use of heat is a good one, and we get good results from the short applications of heat, and then follow it by the cold. I wish this subject might be thought about and discussed oftener in the medical associations. The use of hydrotherapy is relegated by the ignorant, and I don't hesitate for a moment to be a defender of its scientific value. It has a basis that is well founded. I wish to call attention to another point in the use of hydrotherapy in typhoid fever. We are apt to make a mistake when the skin is cold; the blood supply to the skin is limited, and the internal organs are engorged. A heat application for ten seconds will bring the blood to the surface, and then we apply the cold and we get a better reaction. The use of friction has been suggested, and it is a most excellent feature, and is essential. We can't get the par excellence results without it. The friction should be extremely superficial and rapid. The heart brings the blood to the surface and then we can use the cold applications. I called attention to another point, that is, cold not only reduces the fever, but it does more. It is the significant point of the treatment. The cold stimulates the vital processes of the body, and increases the alexins in the body. The heat increases the defenses and is an effort on the part of nature to do away with the toxins. I don't think we get the greatest results from the bath, as it does not control the nerve centers. I want to thank the Society for the kindness with which they received this report. Hydrotherapy should be studied from a more scientific standpoint in order to get the benefits. I want to say that I intended to suggest the idea that by the scientific use of heat and cold, blood letting may be avoided. Any part of the body may be depleted of blood by taking it to the skin, and promiscuous bloodletting may be obviated by the agency of heat and cold.

SPINAL ANESTHESIA WITH TROPA-COCAINE IN GENITO-URINARY SURGERY.*

By M. KROTOSZYNER, M. D., San Francisco.

AS early as 1885 in the first publication upon spinal anesthesia that appeared in medical literature, Corning (1) says: "Whether the method will ever find an application as a substi-

* Read before the Medical Society of the State of California, at the annual meeting, held in San Francisco, April 14 to 17, 1902.

tute for etherization in genito-urinary or other branches of surgery, further experience alone can show." Since August Bier's first experiment with spinal anesthesia he emphasized the fact that operations in the pelvis, perineum, and the anus are fitted for this mode of anesthetizing, as complete analgesia may be obtained for these regions through small and comparatively undangerous doses of the anesthetizing drugs.

My own experience with spinal anesthesia dates back about two years. At that time I witnessed several operations under spinal anesthesia by Dr. Tait, who, with Dr. Caglieri, wrote a remarkable treatise (2) upon the subject. I soon afterwards proceeded to experiment with spinal cocainization in some of my old prostatic patients, where a general anesthetic appeared to be dangerous on account of heart and kidney complications. My experience with the method was not very satisfactory on account of the very distressing and often dangerous symptoms which most of my patients exhibited during and after spinal cocainization, and at the last meeting of the California State Medical Society, held in Sacramento, I said, discussing Dr. A. W. Morton's (3) paper on spinal cocainization: "I have used this method * * * and have noticed such violent and distressing symptoms * * * that I would not wish to repeat this method of anesthetizing unless I am compelled to."

Such and similar objections to spinal cocainization are voiced by various authors. Mikulicz (4) for instance, reports among thirty-five cases of spinal cocainization, ten times distressing symptoms during and eight times after the operation. The horrible picture of intoxication so often observed after spinal cocainization is best described by Kammerer:

Suddenly the patient becomes pale, the pulse becomes rapid and small; the patient yawns and makes deep and difficult inspirations until dyspnea sets in, pulse thready, not palpable; profuse perspiration, nausea and vomiting, spastic contractures of lower extremities; pulse-rate, that had increased to 140-160, sinks to 55-70; collapse at different periods. These symptoms may last a very few or even fifteen or twenty minutes.

I had, therefore, almost decided to abandon spinal anesthesia entirely when my attention was shortly afterwards called to an article of Willy Meyer of New York (6) who had operated on three cases under spinal anesthesia with tropa-cocaine, and at the same time Schwartz's (7) publication upon the use of tropa-cocaine in place of cocaine fell into my hands. Schwartz arrived, through carefully conducted experiments, at the result that 0.05 tropa-cocaine injected into the subarachnoid space produced as perfect an analgesia as the ordinary cocaine, while none of the disagreeable and dangerous symptoms experienced with the ordinary cocaine were noticeable.

Tait (e.c.), who had experimented with several other drugs in order to avoid the toxic influence of cocaine, began at the same time to use the tropa-cocaine and called my attention to its advantages over the cocaine, especially in its not being accompanied and followed by the above-mentioned distressing and dangerous symptoms. I had at that time under my care an extremely sensitive patient of 75 years, with a supra-pubic fistula of four years' standing as a result of supra-pubic lithotomy, from which the urine continually flowed down alongside the supra-pubic tube over the patient's thighs, causing a very annoying eczema. Rectal examination revealed a very large prostate, the middle lobe of which obstructed the entrance of the bladder. On account of the patient's advanced age and his faulty kidneys, an operation under local anesthesia in the hypersensitive patient seemed to be impracticable. I therefore decided to perform a Bottini operation under spinal anesthesia with tropa-cocaine. I injected 0.05 or 5-6 of a grain of tropa-cocaine and started five minutes after injecting to operate. In rapid succession I introduced steel sounds of increasing size in order to dilate the urethra, that had not been used for several years as a urinary channel; then I introduced the Bottini instrument and made three very extensive incisions to the three lobes respectively, leaving a catheter in the bladder afterwards. During the operation the patient was occupied in conversation with a friend, his pulse did not increase in rate nor deteriorate in volume, no nausea, no vomiting, respiration normal, not the least sign of pain during cauterization of the gland. The patient did not show any disagreeable after-effects from the anesthesia (no rise in temperature, no headache). I repeated in this patient twice the same method of anesthesia, the first time about six weeks after the first Bottini operation, in order to close the supra-pubic fistula, the second time, two months after the second operation, in order to perform a second Bottini operation for the re-establishment of the spontaneous micturition through the natural passages after closure of the supra-pubic fistula.

Such a result could never have been obtained without the aid of this method of anesthetizing, because I don't think the patient could have survived three general narcoses, neither would a careful surgeon have attempted these operative procedures on account of the dangers connected with general anesthesia in old and decrepit individuals.

Since this experience I have done almost all my genito-urinary surgery under spinal anesthesia with tropa-cocaine and can recommend it highly. I have operated so far in over 120 cases. Most of my work was done on the bladder, scrotum, penis, etc.

Tropa-cocaine is chemically benzol-pseudotro-

pin hydrochlorate, and has the formula C_8 H_{14} No (C_6 H_5-CO) HCL. This alkoloid occurs with cocaine and other bases in the small Java Coca leaves, prepared hynthetically by Liebermann. It forms white needles, melting at 271° C., or 519.8° F., and is readily soluable in H_2O In solutions of 2 per cent to 5 per cent it produces a rapid anesthesia, is less toxic and more reliable than cocaine (Ferdinando and Chadbourne).

I have always used for my work the glass tubes as prepared by Dr. Tait. Each tube contains 1 cc. of a 4 per cent solution of tropa-cocaine, both ends of the tube are sealed, then placed in a bath of water and glycerine for one and one-quarter hours, at a temperature of 120° F. and cooled off. The glass is filed off at a convenient place so that it may be broken when the contents are needed for injection. I shall not describe here the instrumentarium and technique of lumbar puncture, as those points are repeatedly dwelt upon by various authors in former publications. I generally obtained complete analgesia for my field of operation by the above-mentioned dose of tropa-cocaine, and generally started the operation ten minutes after the injection. In some cases where I injected less than 1 cc. of the 4 per cent solution, or even only half the dose, I had to wait fifteen, twenty or twenty-five minutes until analgesia was obtained. In two cases of my whole material no analgesia occurred, and the operation had to be done under general anesthesia. In both instances the escaping of several drops of cerebrospinal fluid made it sure that the point of the needle had punctured the subarachnoid space and in the case of a very nervous woman with visical spasms certain symptoms (slight icterus with rise of temperature until eight days after spinal puncture) were observed that I was inclined to ascribe to the lumbar puncture.

In nervous and excitable patients, occasionally, the operation was somewhat impeded by great restlessness of the patient, which sometimes could be arrested by placing a mask over the patient's face, simulating chloroform anesthesia. Whenever those patients, after the operation, were asked if they had felt any pain they invariably denied it. We never used of late a stimulant hyperdermatically or *per os* before or during the operation, as generally no shock or other distressing symptom caused by the puncture or the injected drug were noticeable. One assistant is placed at the head of the patient to carefully watch respiration, pulse, pupils, etc. A nurse is detailed in some instances to engage a nervous patient in pleasant conversation and to distract notes upon one interesting observation:

An important point that so far has not been brought out is that this method of anesthesia permits us to obtain the patient's consent for removal of an organ during the operation, where in general anesthesia a second operation would be necessary because the patient's consent for a more radical procedure could not be obtained. To illustrate this point I may be permitted to give brief notes upon one interesting observation.

A man of 33 consulted me for a subacute anterior urethritis (with gonococci) and epididimitis on the right side. Upon taking the history of the case I ascertained that the right testicle had been swollen for several months previous to the present attack of gonorrhea, which at that time lasted for about three weeks. As no benefit could be effected by ambulatory treatment, the patient was persuaded to enter the hospital, where, in spite of rest and careful treatment, the swelling of the right epididymis increased; a few days later an effusion into the tunica was noticeable, which rapidly increased; puncture was made for diagnostic purposes and 1 cc. of a sero-purulent fluid obtained, that contained pus cells, tuberclebacilli, streptococci, but no gonococci. The operation under spinal anesthesia revealed an epididymis and testicle that were entirely riddled by tubercular abscesses, miliary tubercles covered the cord and surrounding tissues up to 4 or 5 cm. from the epididymis. I informed the patient of the condition of the organs mentioned and obtained permission for castration, which I did, following up the vas deferens to the internal inguinal ring.

I am certain from my experience that spinal anesthesia with tropa-cocaine will prove to be a useful and reliable method in our field of surgery, though I will admit that disagreeable symptoms will occasionally be noticeable from its use. Repeatedly in my cases a slight dyspnea was observed; the pulse-rate increased to 100, in two cases to 120; involuntary defecation occurred in three cases, and in the case of the above-mentioned woman, where no analgesia was effected, profuse vomiting followed the injection of the drug. But all those disagreeable sequels were the exception; as a rule the analgesia was complete and the operation could be finished without any interruption caused by the intra-spinal injection. The same favorable results were obtained as regards after-effects. I have never observed the excruciating headache so often noticeable after spinal cocainization, and I am inclined to believe with Bier (8) that neither the difference in pressure of the cerebro-spinal fluid nor circulatory disturbances, but the toxic effect of the cocaine is the real cause of this distressing symptom. In regard to increase of temperature as a sequel of spinal anesthesia with tropa-cocaine, I cannot express a decided opinion. In the few of my cases where it occurred I was not certain whether the condition of the wound was not the cause of this symptom.

The majority of my operations lasted less than an hour. Only in one case (an external urethrotomy with total obliteration of the urethral canal) we worked one hour and forty minutes with complete analgesia after injection of 0.05 tropa-cocaine.

The only real danger, to my mind, connected

with this method of anesthesia lies in the possibility of sepsis to the spinal canal. Therefore I would not attempt spinal anesthesia in a private dwelling. In the hospital I have the patients in whom spinal anesthesia is to be made prepared as for a laparotomy. The day before the operation the patient gets a full bath, his back is shaved and a sublimate-pad applied upon it. On the operating table the field of the puncture is sterilized as carefully as the site of an abdominal section.

I hope you will test this method unbiasedly in your genito-urinary surgical work, so that well established indications for this method of anesthetizing may be drawn from for future experience. My work teaches me that the method seems to be impracticable in very nervous and excitable patients. I can highly recommend it, though, for old and decrepit individuals where a weak heart or unreliable kidneys would contra-indicate a general anesthesia. I have not had a mishap in my spinal anesthesia with tropa-cocaine so far, and I consider this method not to be more dangerous than any other form of anesthetizing, while its advantages over general anesthesia for the patient are unquestionable.

REFERENCES.

1.—J. L. Corning: *New York Medical Journal*, Oct. 31, 1885.
2.—Dudley Tait and Guido Caglieri: Transactions of the Medical Society of the State of California, 1901—p. 266.
3.—A. W. Morton: Transactions of the Medical Society of the State of California, 1901—p. 228.
4.—I. V. Mikulicz: *Arch. f. Klin. Chir.*, Vol. LXIV, p. 757.
5.—F. Kammerer: *N. Y. Med. Monatsschr.*, 1901, p. 1.
6.—W. Meyer: *Med. News*, Vol. LXXVIII, p. 569.
7.—Karl Schwartz: *Centralbl. f. Chir.*, 1901, No. 1.
8.—Aug. Bier: *Arch. f. Klin. Chir.*, Vol. XLIV, p. 236.

ON PTOMAINE POISONING.*

By E. O. JELLINEK, M. D.

Visiting Physician to the German Hospital, San Francisco.

PTOMAINE poisoning, with exclusive or prevailing gastro-intestinal symptoms of lesser or greater severity, is not of rare occurrence in medical practice.

The symptoms are those of a more or less pronounced gastro-intestinal catarrh, with general feeling of malaise, epigastric pressure, regurgitation and vomiting of sour or bitter particles, and also diarrhea. In the medium and more severe cases the above symptoms are accompanied by secretory disturbances, characterized by dryness of the skin and mucous membranes.

In addition, we find nervous disturbances, which demonstrate themselves in different gradations of bulbar symptoms. These last-named cases are fortunately rare, and it is my purpose to present the differential diagnosis of these, based upon the material about to be given.

In a boarding-house of this city, seven persons became sick within nine days, three of whom died. The eating of tainted boiled beef on the 27th of November was given as the cause of the sickness. From two of the fatal cases, which were not under my care, I obtained the following histories:

Case 1. The patient became sick two days after eating the meat, with symptoms of general muscular weakness, dryness in the throat and difficulty in swallowing. Died after two days.

Case 2. The patient became sick four days after eating the meat, with symptoms of general prostration, dryness in the throat, difficulty in swallowing, diplopia, ptosis. Died in six days.

I had under my observation five cases, one of the patients dying, the other four recovering.

The history of these are briefly as follows: On the 6th of December Dr. H. and his wife visited me in my office.

Case 3. Dr. H. had complained for six days past of tiredness, dizziness, lack of appetite, pronounced weakness in the legs, causing inability to walk two blocks; of heaviness of the arms, of dryness of the mouth.

Case 4. Mrs. H. complained of practically the same symptoms, with the exception that the dryness in her throat was more pronounced and she had difficulty in swallowing; slight ptosis, and constipation.

Case 5. On the 8th I was called to see Mrs. C. She had felt ill for several days, remaining in bed, and at the time of my visit she still complained of general muscular weakness and lack of desire to get up; lack of appetite, constipation, scratching and dryness in the throat.

Case 6. Mr. T. called upon me on the 9th of December. He complained of general tiredness, great muscular weakness, making it difficult for him to walk; constipation, and had no desire to work. He had also, for several days previously, felt dryness in his throat; nausea and dizziness.

Case 7. On the night of the 10th of December I was called to the Homeopathic Sanitarium to examine Mr. G., who had become sick on the 3rd of December. He had been in the Sanitarium for five days with a diagnosis *in suspenso.* The history which I could obtain was as follows:

The patient became sick with symptoms of pronounced prostration, lack of appetite, dryness and scratching in the throat. He could open his eyes only with difficulty. He was constipated; no urinary disturbances, no headache. On the following day difficulty in swallowing was present, which increased to actual inability to swallow, accompanied by increasing dryness of the mouth and pharynx and great thirst. The voice became hoarse, breathing and pulse quickened. No food had been taken for five days, owing to difficulty in swallowing and coughing caused by particles of food lodging in the larynx.

Examination gave the following status: Well-built man of average height and musculature, with slight panniculus adiposus. No edema. The patient rested in a passive, half-sitting posi-

* Read before the San Francisco County Medical Society, January 13, 1903.

tion in bed; the head dropped over his right shoulder. The skin was pale and dry, expression of the face crestfallen. The eyes were closed, and the eyelids could be raised, with great effort, about one cm. Eye movements free; no diplopia; no disturbance of the facial or trigeminus nerves. The tongue could be voluntarily stretched out and moved in all directions, still the movements were retarded. The patient could whistle; there was no atrophy of the tongue or lips. The uvula was raised only slowly, the pharyngeal reflexes sluggish. The speech was low and hoarse, and distinctly nasal, often unintelligible. The principal complaints of the patient were the severe dryness of the throat and the inability to swallow. I gave the patient, with his head down, a teaspoonful of milk to swallow, but he began immediately to cough. The cough sounded weak. In his breathing I heard a tracheal gurgle, but no phlegm could be raised. By allowing the patient to hang his head out of the bed till it touched the floor, a slight amount of mucus was expectorated. The tongue and mucous membrane of the mouth were dry, with small ulcerations. Temperature 102, pulse ranged between 120 and 140. Breathing shallow—36 per minute. There was slight dullness at the base of the right lung, with small, moist rales. Sensorium undisturbed. As I was asked to take charge of the patient, I had him brought the next morning to the German Hospital.

The status taken on the 11th was practically the same. The prostration was even more pronounced, the patient not having slept, although one-fourth of a grain of morphine had been administered. In fact, since the beginning of his illness the patient had slept scarcely two hours.

The examination of the urine gave s. g., 1021; slightly acid; nucleo-albumin present; serum-albumin a trace; no casts. Dullness and rales increased in the right lung. Temperature, 101.6; pulse, 140.

Therapy: 500 cc. saline infusion hypodermatically; stomach lavage; 0.5 calomel by mouth; high irritations. (I did not care to risk venesection, owing to weak heart.)

Great care was taken to properly wash out the mouth, and food was introduced by stomach tube only.

On the 12th of December the patient, after being given hypodermatically one-fourth of a grain of morphine, slept four hours. He felt better and more hopeful. He could open his eyes a little wider. Swallowing was still nugatory, otherwise *status idem*. Therapy continued as before.

At four o'clock on the morning of the 13th the patient died suddenly.

The post-mortem was performed by Dr. Ophüls the same day at the Coroner's office. His report is as follows:

AUTOPSY.

Mr. Goodyear—Strongly built, very muscular, moderately well-nourished, man of middle age, extreme pallor of skin and mucous membranes. No edema; no edema of superficial lymphatic glands. Very marked rigor mortis. Small, round exostosis, about 1½ c. m. in diameter, present in middle of left parietal bone. Dura mater a little tense; larger veins in diploe of skull are filled, in the longitudinal sinuses a considerable amount of fluid blood and a few small clots.

The pia mater is hyperemic and a little edematous on both sides; convolutions on the right side are slightly flattened, a moderate amount of Pacchionian granulations along the longitudinal fissure. The same hyperemia of pia mater at base of brain; large blood-vessels at base of brain are normal; a very large amount of dark fluid blood at sinuses at the base of brain. Half a teaspoonful of blood-stained fluid in the left lateral ventricle, marked hyperemia and slight edema. Conditions exactly the same on the other side. Sella turcica and plexuses hyperemic. The third ventricle is normal. Bottom of fourth ventricle shows a few hyperemic veins (small), no hemorrhages present. Cerebellum hyperemic and edematous; basal ganglia hyperemic. No hemorrhage anywhere.

Marked edema of soft tissues at lower part of chest. Peritoneum slightly hyperemic; about a teaspoonful of clear fluid in recto-vesical pouch, but little fat present in the omentum. Diaphragm at fifth rib on both sides. The liver projects two-finger breadths in mammary line on the right side; a considerable part of the middle portion of left lobe of the liver is exposed.

In left pleura there is about 100 c. cm. of slightly blood-stained fluid; in right pleura about 200 c. cm. of more intensely stained fluid—no adhesions. Remnant of thymus gland present; a teaspoonful of fluid present in pericardium, the veins of which are much injected. Heart is of normal size; right ventricle dilated, left ventricle in moderate contraction; much fluid blood and a few small clots present in pulmonary artery; valves normal, a few yellow spots in aorta and in right coronary artery; heart muscle very cyanotic and edematous. From cut ends of the large blood vessels a large quantity of dark blood is discharged.

A number of small petechiæ in the posterior part of pleura of left lung; very marked passive congestion, edema and collapse of posterior part of left lung. The entire lung is more or less edematous. Very marked hyperemia of mucous membrane of bronchial tubes, which contain foamy, bloody fluid. Extensive collapse of posterior part of upper lobe of left lung.

Right lung is in very much the same condition, plus some small broncho-pneumonic patches scattered through the middle lobe in the posterior part.

Spleen slightly enlarged, and the pulp is full of dark ,almost black, venous blood; organ is quite hard.

Left adrenal normal; left kidney, very marked cyanosis and some edema, no visible lesions. Right kidney same as left.

Bile duct patulous, pylorus also; passive congestion of mucous membrane of stomach. Pancreas in marked passive congestion. Liver enlarged; gall bladder and contents normal; liver shows very marked passive congestion and is edematous—slight enlargement—and hyperemia of retroperitoneal and mesenteric lymphatic nodes.

In the small intestine there is a moderate amount

c. feces of absolutely normal appearance. In large intestine there is bright yellow semi-fluid material; mucous membrane of intestines perfectly normal, except for marked passive congestion and a little swelling in the upper part of jejunum. No swelling of lymphoid particles.

Microscopical examination of stained specimens of medulla pons and cerebellum showed all capillaries overfilled with blood.

Let us now examine these cases critically in order to ascertain what differential diagnostic points can be brought out.

In the first place, there is no doubt there was a local epidemic in the house mentioned, as we are accustomed to see after tainted sausage or meat has been eaten.

The entire absence of fever, of cholera-like diarrhea with cramps in the calves, of cyanosis, of carbuncles, excludes the diagnosis of anthrax. On the other hand, the nervous and secretory disturbances point to baccilus botulinus infection. The typical picture of botulismus is briefly as follows:

In addition to the intestinal sypmtoms already mentioned, early diminution in the secretory function occurs, which demonstrates itself through absence of perspiration, through diminished or absent salivary secretion, causing dryness and ulcer formations in the mouth and throat. The dryness of the respiratory tract causes the hoarseness of the voice and the croup-like cough; the dryness of the intestinal tract produces constipation. These symptoms are dependent on paralysis of the secretory nerves or their centers. Besides, we have disturbances in the course of the cerebral nerves. Patients often complain of seeing films, colors, and of diplopia. The movements of the eye muscles are often impeded, the pupil dilated and reacting sluggishly. Very often we find paralysis of the levator palpebra superioris, causing ptosis, this sign being particularly pathognomonic for botulismus. Often enough we find involvement of the hypoglossus and glosso-pharyngeal nerves, causing well-known symptoms. I wish here to emphasize that I do not attribute the complete aphonia and aphagia as much to the bulbar involvements as to the dryness of the mouth, pharynx, esophagus, trachea and bronchial tubes. As a result of the diminished sensibility of the isthmus faucium and pharynx particles of food get into the trachea with consequent aspiration-pneumonia. Of the cerebral symptoms, I mention headache, vertigo, and great apathy.

The muscular weakness is very pronounced. Most always there is present a feeling of thirst, sometimes of hunger. The voidance of urine is undisturbed.

The disease can result in death in a few hours, or a few days, or may linger for months, with alternate intervals of improvement or retardation. To be sure, many cases recover; still the mortality is between 20 and 40 per cent.

The confusion of this disease with acute bulbar paralysis is, in my opinion, to be excluded for the following reasons:

Primarily, we have in botulismus a paralysis of the secretory nerves or centers, which never occurs in acute bulbar paralysis. You will remember that in bulbar paralysis the saliva flows out of the mouth. The lips in botulismus are not paralyzed—a constant symptom of bulbar paralysis, in the same way as ptosis is in almost constant symptom of botulismus. Furthermore, the acute bulbar paralysis is almost always combined with paralysis of one or more limbs, while in botulismus such paralysis is absent; and we only occasionally find paresthesia in fingers or toes. In addition the epidemic occurrence negatives acute bulbar paralysis.

The therapy depends principally upon eliminating the poison as quickly as possible from the stomach and intestinal tract through stomach lavage and purgatives, the best of which is calomel. If the symptoms are those of paralysis of the secretory functions, so that we must conclude the poison has been carried into the circulation, then we should resort to venesection and saline infusion. On the theory of paralysis of the secretory functions, it seems wise to me to try diaphoresis by means of steam or pilocarpin. I scarcely believe that a diaphoretic attempt in bed with steam or pilocarpin would be injurious to the patient, if the heart is not too weak, and arguing from the beneficial results obtained by this measure in uremia it might be of even life-saving value in this disease. To prevent inanition and aspiration-pneumonia, food should only be given by stomach tube. The hygiene of the mouth and skin should be carefully observed. Against sleeplessness morphin subcutaneously should be given, and for threatening heart failure the usual cardiac stimulants should be employed.

At the monthly meeting of the Hawaiian Medical Association on Saturday evening, December 6th, the pestiferous mosquito was on the board for dissection. Dr. Sloggett, president, read a paper on the subject, which was followed by a discussion. No definite line of public action was suggested, the idea being to bring the matter into agitation.

President Sloggett's paper gave a resume of the experiments conducted on the Atlantic coast, which had achieved considerable results of a satisfactory nature. The remedies for the pest were drainage, the filling of swamps and the application of petroleum to stagnant water. Reference was made to the great difficulty recognized as lying in the way of remedial measures here, from the rice and taro fields in the vicinity.

SUPPLEMENTAL REPORT ON HYGIENE*

By H. J. CROMPTON, M. D., Sausalito.

IN presenting a paper on this important theme, it would be presumptious if one claimed originality in treating so large a subject, and one as old as history. We have authentic information that the Israelites, as nomads in the desert and camp, or as dwellers in conquered, walled cities, had up-to-date knowledge of preventive medicine, as set forth in the Mosaic code, whose provisions were rigorously enforced from religious, as well as sanitary, considerations providing for personal cleanliness, purification of tents or dwellings, the selection of healthful, wholesome food, the seclusion of persons with contagious disorders, and in other ways caring for the physical well being of the Jewish nation. So, too, with the ancient Greeks and Romans, who, unlike the Jews, were not prompted from religious convictions, yet were far from neglectful in sanitary matters, such as drainage, sewerage, the construction of splendid aqueducts, thus providing for an abundant supply of pure, free water, and bathing places for the people. They early organized types of our modern boards of health, by whom the people were warned against avoidable, self-inflicted causes of human suffering, such as dietetic imprudence, filthy, overcrowded, illy ventilated habitations and the like. About the dawn of the Christian era there was a retrograde movement all along the line, apparently throughout the habitable globe. All sanitary care of the body became a thing of the past; to a great extent the human race became almost exclusively flesh-eaters, sometimes partaken of in a putrid state, or preserved from such by immersion in strong salt solution. Often supplies ran short, and famine and pestilence went hand in hand; and through scurvy, typhus, smallpox, and black plague there were times when extinction of the race was threatened. But in the later half of the last century sanitary science received a wonderful impetus—so splendidly illustrated in our Civil War, when so many noble men and women banded together to care for the sick and wounded of both armies. Thus were thousands of the flower of American manhood saved from untimely graves and restored to health and usefulness. We old Confederates cherished hard feelings towards our northern invaders—old Ben Butler being one of our pet aversions. We charged him with purloining spoons and other silver ware; but when we saw how instrumental he was in so nearly stamping out a visitation of yellow fever, and giving the Crescent City a thorough cleansing, he occupied a warmer place in the affections of our people! Since our war with Spain there has been the most splendid achievements in the line of preventive medicine. We need give but one illustration from the health reports from Havana, for November last, in which we read that:

The general sanitary condition is excellent, each month showing steady improvement over the corresponding month of the preceding year. Taking November for the past eleven years, we find the maximum number of deaths, 2054, occurring in 1898; the minimum, 443, occurring this year. During the month we have had no cases, no deaths from yellow fever. This can be said of no preceding November since 1762. Taking this month for the past eleven years, the maximum number of deaths from this disease occurred in 1896, when we had 244; the minimum, 1898, when we had 13. Last year, 1900, we had during this month 214 cases, and 54 deaths. October and November are the months when yellow fever is rife. This year (1901) the last case occurred September 28th. Thus we have gone over two months without a single case or death. At last are we freed from infection.

Much of this glorious result is attributed to the war of extermination now waged against mosquitoes—charged with being the sole transmitters of the infection. Maybe this is too sweeping an assertion, but let that rest until some useful purpose is shown as an excuse for creation of that musical pest.

But looking nearer home—here in California—things sanitary are not in the most satisfactory condition, not up to date in many respects. To illustrate, unless one goes well up into the mountains near the perpetual snow lines, our beautiful streams—the source of water supply for most of our people—are used as outlets for sewers and dumping ground for swill, dead animals, offal, and other filthy refuse. Many otherwise intelligent, justice-loving citizens have fixed themselves in good shape by constructing drains and sewers from their own premises into the water supply of the fellow below! Along the sea shore, where the population is dense, conditions are just as bad—outlets and sewers into bathing and breathing places of the people modified, tis true, by the saving qualities of salt water. But let us hope these shocking conditions are not to go on forever. All we need is awakened public sentiment to condemn such a scandalous policy. Fortunately the evil is not past remedy. A polluted stream will purify itself, if we stop adding new supplies of nastiness. 'Tis well to secure proper drainage, which can be done without transforming our limpid streams into noisome sewers. Of course, sewage may be treated chemically and disposed of at a profit; or, better still, follow the old Israelitish custom of disposing of the same by the application of sufficient fire to destroy germ life and arrest the process of putrefaction.

The disposal of the human body by cremation as now managed is rather cumbersome and expensive. The funeral director as undertaker, crematory associations, livery stables and other worthies, all enjoy a share in the expenses of such disposal, so that many a poor widow pays out her last penny in following the fashion or stupid

*Read before the Medical Society of the State of California, at the annual meeting, held in San Francisco, April 14 to 17, 1902.

customs, when the bread-winner of the household passes away. Medical men, with a little concert of action, can aid in simplifying and cheapening such process radically. What is wanted is a light, portable, readily superheated apparatus, to be stationed for the time being at the back door, the remains to be placed therein and reduced to least possible bulk within about the same time as required to read this prosy article!

The scheme of municipal ownership of public utilities, such as light and water plants, is quite popular just now, and a step in the right direction, as, for example, there are towns near the seashore where the water supply is limited and maybe contaminated from want of proper supervision. Under such, and other conditions, a salt water plant should be established, the water raised to a proper elevation and distributed, and used for the many purposes for which so well adapted—the flushing of sewers, street sprinkling and putting out of fires. Of course there is nothing new about this suggestion, but there are many who apparently need such a reminder.

Members of our profession, so generally of high standing intellectually, morally and socially, ought to occupy a position of commanding influence. If you will all resolve when you go home to be active, and take more interest in the groundwork of politics, in the selection of those who are to be lawmakers in town, county, State and nation, you may secure the enactment of such laws as will give the people pure food, pure water, and a less vitiated atmosphere to breathe in, good streets and roads, thus making "life worth the living."

SAN FRANCISCO SOCIETY OF EYE, EAR, NOSE AND THROAT SURGEONS.

Meeting December 18, 1902, Dr. Geo. W. Merritt, Chairman for the Evening.

Dr. Geo. W. Merritt showed a case of double descemetitis, with fixed and floating opacities in the vitreous. The patient was a woman aged 22, the subject of hereditary syphilis. When she presented herself for treatment at the Clinic one month ago, the vitreous was full of opacities, but under mixed treatment the opacities have so diminished that they are now hard to find.

Dr. Louis C. Deane showed a man aged 62, for whom Dr. H. B. de Marville and he had built a nose from the skin of his forearm. The man had a rodent ulcer of the nose which had destroyed the lateral cartilages and the right ala completely, leaving an unsightly and bad-smelling cavity. The ulcer had persisted for 14 years, and the operation was done one year ago. Several secondary operations were necessary, but the nose is now completely healed and looking well. Dr. Barkan asked Dr. Deane whether the X-ray had been tried and referred to several cases of skin epitheliomata which he had successfully treated by that agent. Dr. Deane stated that operative measures had to be used for cosmetic reasons, though he also spoke of the good effect he had in the case of an epithelioma of the lip from solar rays, by which the temperature of the tumor had been raised to 200 to 400 degrees, and had totally disappeared.

Dr. Barkan showed two cases of coloboma of the lens and iris, both of which had the peculiarity of being placed upwards and outwards, although Fuchs states that coloboma of the iris is always downwards. In another case, a boy of about 20, there was marked proptosis of the right eye, with strong dilation of the subconjunctiva veins. No pulsation could be felt, nor bruit heard in the orbit. An anamnesis was not obtainable, the only thing bearing on the eye condition being the fact that the patient had been subject to very violent attacks of asthma. Dr. Eaton thought the cause was possibly a veinous tumor. Dr. Payne thought the tumor had its origin in the asthmatic attacks. Dr. Powers suggested that there might be an aneurysma, although the absence of a bruit rather conflicted with that diagnosis. The absence of pain excluded glaucoma, the mobility of the eyeball spoke against cellulitis, and the probable diagnosis, he thought, was a malign neoplasm. Replying to Dr. Deane, Dr. Barkan stated that he had not tried the effect of bending the head far forward, in order to see whether it would cause extreme protrusion, as in the case demonstrated by Dr. Merritt early in this year. Dr. Wiborn stated that he had seen two cases of orbital cellulitis due to ethmoidal trouble, but that he did not think there was any cellulitis present in this case.

Dr. Brady showed the picture and skull of a cat which had extreme megalophthalmos of the right side.

Dr. Deane exhibited some lantern slides illustrating diseases of the fundus of the eye, they had been developed in colors and showed a new departure in this class of work.

The following were elected officers for the ensuing year: President, Dr. Louis C. Deane; Vice-President, Dr. Redmond Payne; Second Vice-President, Dr. Robert Cohn; Secretary, Dr. M. W. Fredrick; Treasurer, Dr. Geo. W. Merritt; Librarian, Dr. V. H. Hulen.

DEATH.

Dr. H. H. Warburton, a pioneer physician of the Pacific Coast, died at Santa Clara on the 8th inst. He was English, born in the year 1819. He came of a family of physicians, his father and grandfather having been members of the profession. When Dr. Warburton came to this Coast there were but three physicians in California, the only other one in San Francisco having been located at the Presidio.

MISCELLANEOUS.

Impure Drugs. *American Medicine:* "Drug adulteration is a peculiarly infamous bit of scoundrelism of which both the medical and pharmaceutical professions should make an end. Is it possible, one is compelled to ask, that but a small percentage of all drugs are pure? If so, 'therapeutic nihilism' has an unexpected and most sufficient ground for being. Again appears the great need of a united and organized profession which would have mind and power to blacklist and thus kill out the dishonest dealers or manufacturers who traffic in human disease and death."

Polypoid Growth in Children. Dr. L. H. Adler, in *Pennsylvania Medical Journal:* "The only plan to be recommended in the treatment of a polypus is the removal of the growth. It is not safe either to cut or tear polypi, as troublesome hemorrhage may ensue, and the subsequent attempt to place a ligature upon the bleeding vessel is by no means an easy task.

The clamp and cautery may be employed for the removal of these growths and the method is a very satisfactory one, but the procedure is rather formidable, especially to the patient. The ligature can be, and often is, used, but the simplest method, however, is to grasp the pedicle close to its base with hemostatic forceps, and with another pair applied to the balance of the pedicle to gently twist the uppermost one until it comes away. In this manner there is no danger of hemorrhage, no pain and no necessity for the patient resting more than the first twenty-four hours."

Secretary of Health. From Dr. Henry Reed Hopkins' anniversary address before the Medical Society of the State of New York: "The efficient sanitary organization of our country, where the humblest citizen is a member of the royal family, will not be suitably inaugurated until there shall be in the Cabinet at Washington a Secretary of Health. The medical profession of the United States would require but a few national campaigns in the name and interest of State medicine to accomplish this most salutary, most desirable of sanitary achievements."

Examination of candidates for appointment in the medical corps of the United States Army will be resumed by the Army Medical Board in Washington, D. C., April 20, 1903. Classes will be invited to appear April 20th, and each Monday thereafter as long as is necessary. Full information as to method of application, nature and scope of examination, and the like, will be furnished by the Surgeon-General at Washington upon request of those interested. Applicants from civil life are restricted in age to twenty-nine years, and hospital training or professional experience in private practice is expected of all candidates. There are at present thirty-five vacancies to be filled.

Antivivisection Argument. *Philadelphia Medical Journal:* "The newspapers tell a grewsome story of how a party of Indians was taken last week to see the Chicago stockyards, and how the sights in Armour's slaughter-houses were too much for them, for one Indian fainted at the sight of so much blood and three others were taken sick at the stomach. The only logical and consistent antivivisectionists in the world are the Brahmins of India. These Hindoos hold all animal life equally sacred, and think it a sin to eat flesh. We do not understand why the American antivivisectionists should occupy a lower moral plane than the Hindoos. But our flesh-eating zoophiles will not renounce their carniverous habits, and they continue to patronize the slaughter-houses, a sight of which can make even ar Indian sick."

Enema in Insanity. *British Medical Journal:* "The blood pressure is invariably low in an acute mania, while high in melancholia. The lower pressure in mania is responsible for the restlessness which is a constant symptom in this condition. This restlessness Dr. Craig has found to be relieved by the employment of an enema of eight to ten ounces of water. The patient's condition steadily improves when the enema is retained. This is a new and very important indication for this simple hydriatic procedure. The warm or neutral bath ought to be as useful in relieving the high pressure of melancholia as is the enema in relieving the low pressure of mania. The temperature of the bath should be 94° to 96°, the duration from thirty to sixty minutes."

Gymnastic Treatment of Tabes. *Deutsche Med. Woch:* "Dr. A. Bickel has recently made experiments to determine the source of the compensation from systematic exercise in tabes. He divided the sensory nerves of the hind leg in dogs. In a few months the resultant ataxia had been compensated. Extirpation of the labyrinths resulted in severe ataxia and compensation was never full thereafter. Labyrinth extirpation is not followed by ataxia, except under such conditions. After compensation of ataxia from division of hind leg sensory nerves in dogs, portions of the sensory motor zone of the cortex were removed and sensory ataxia resulted. These experiments indicate that compensation of ataxia does not result from restitution in the limbs, but is due to other organs, particularly the labyrinths and the sensory motor zone of the cortex."

X-Ray Burns. Dr. M. R. Toland in *Southern California Practitioner:* "X-ray burns are the exception rather than the rule, at the present time, as all the rays can and should be shut in a suitable lead-lined box, except those emanating from the focus point. These can be directed to the particular part we wish to treat, skiagraphy, or examine with the fluoroscope. Besides an aluminum screen, grounded, may be interposed between the tube and patient. Aluminum does not absorb the rays, hence the advisability of its use to catch all impurities in the atmosphere that may be the real cause of burns. There are many thousands of examinations made every year in the hospitals without serious burns."

Treatment of Consumption. Dr. M. J. Brooks, in *New York State Journal of Medicine:* "There is no specific in the treatment of phthisis, nor is there likely to be one; for phthisis is a degenerative process etiologically dependent upon too many factors, both predisposing and direct. Vulnerability, or susceptibility in the sense merely of cell debility—hereditary or acquired—that is the soil, and then, a decided deviation from the conditions essential to a healthy animal life. The direct cause of phthisis is a symbiosis of pathogenic organisms, two or more acting in unison. Not the tubercle bacillus alone, but also pyogenic organisms, and these latter are, in fact, far the more important. Lung destruction, with all its concomitant manifestations, is due solely to this pyogemic superinfection. The implantation of the tubercle bacillus *per se* is not necessarily pernicious. The tubercle itself is a conservative process. It is not the product of the bacillus or organism, but of the organ. Pure tuberculosis is, of course, eminently curable. Likewise phthisis in the great majority of cases, but restorative measures must ever be dependent upon the extent of pulmonary involvement and destruction.

The etiology and cure of cancer is made perfectly clear by the following communication to the president of a medical school:

Dec. 31—1902 (Happy new year.)

——— ———, N. Y. ——— R. F. D.

Dear Sir: I see by the New York *Herald* you don't know what causes a cancer or its cure. I think I can explain it so you can understand, as it is quite necessary doctors should know how to cure every part of the human system is why I write this, though our lives are all done "from before the foundation of the earth." First a vein is bursted by some cause, bruise or pressure, and then the blood is decomposed (killed) in that spot, and other blood like bees in a hive goes to see what is the matter and while trying to heal the spot become poisoned by the dead blood and so the cancer grows like a boil and poisons the whole body and life ceases. Now to cure it is to bind on a poultice of clay, that kills the bachali of all skin disseas even to leprocy or small pox, It draws the swelling all down so a core can be taken out. Tea made of Chinese night soil can poison a person when made of scroffula, leprosy or any other dissease though doctors preaches undertakers and lawyer get a job Please answer ——— ———.

—*American Medicine.*